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Critical Incidents in Classroom Management During Student Teaching Internships and Their Effects on the Teaching Profession: Perceptions of Student Teachers in India and the United States

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The goal of this research study was to determine how critical incidents in classroom management during student teaching can affect a person's view of the teaching profession. The participants of the study were student teachers at a land-grant institution in the United States (US) and student teachers enrolled in a comparable program in India. The student teachers' perceptions of their teacher education programs and their preparedness for classroom management issues were also analyzed. Focusing on those behavior management issues allowed us to identify specific areas in which recommendations can be made to improve teacher education. Implications were based on a survey administered to each participant. Theory *vs.* real-world application, mentor teacher involvement, and perceptions of the teaching profession were big ideas discussed at the conclusion part of this study. Recommendations for teacher education programs were made and implications for future research were addressed.

Keywords: critical incidents, classroom management, student teaching internships, teaching profession, behavior management issues, teacher education

Introduction

Teachers are often faced with the challenge of maintaining classroom management with a diverse population while creating a positive teaching atmosphere. Student teachers often feel challenged by the teaching content while maintaining positive classroom management procedures. Student teachers should feel well-prepared to handle the challenges they will face in the classroom. This study is aimed at discovering factors influencing critical incidents in classroom management of recent student teachers and analyzing how the participants' perceptions of teaching were affected. The primary purpose of this research study was to determine how critical incidents in classroom management during student teaching can affect a person's view of the teaching profession. The secondary purpose of the study was to compare the perceptions between two

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major universities in different countries.

Literature Review

The dynamics of a career and technical education (CTE) classroom can sometimes be very similar to those of any secondary classroom. However, they can also be quite unique and varied. Many career and technical learning activities involve class discussions, include group projects, or take place in a laboratory. Business education classes often center on self-paced and individualized computer activities, family and consumer sciences classes vary from individual work to group activities to whole-class discussions, and technology education classes emphasize projects and learning centers.

Technology education teachers, as well as business and family and consumer sciences teachers, are faced with challenges created by the teaching environment. Attempting to manage students in a CTE setting can be much more challenging than managing students in a traditional classroom setting (Stone, 2011). Hill and Wicklein (2000) suggested that CTE teachers continually upgrade their knowledge and expertise due to the numerous pieces of equipment, materials, and tools used in their laboratories. This allows teachers to keep up with the ever-changing curriculum and to better serve disadvantaged students.

This variety creates an atmosphere that may challenge the teaching and classroom management skills of a beginning or student teacher. Cruickshank, Jenkins, and Metcalf (2009) defined classroom management as "the provisions and procedures necessary to create and maintain a classroom community in which teaching and learning can occur" (as cited in Stone, 2011). Classrooms, in which teaching and learning can occur, must not only be well-managed, but also evoke a comfortable atmosphere for both students and teachers. If this does not occur, teachers and students alike can experience a process of constant frustration.

Certain feelings can alter one's view of the teaching profession as a whole and cause a potentially good teacher to leave the field of education. In a study by Ruhland (2002), classroom management issues were identified as a major reason for business teachers leaving the teaching profession. Promoting positive experiences during student teaching, especially the ones dealing with classroom management, could potentially prevent some cases of this desertion of the profession. The need for quality teachers is always high, therefore, teacher education programs should do whatever possible to retain and develop those students into becoming great teachers. Students must use theory and practical experience from their teacher education programs to build a foundation for developing an effective classroom management theory. As stated by Niles and Cohen (2012), "Translating theory into practice and defending a position based on case material and theoretical constructs are needed to energize and focus the learning experience for the prospective teacher" (p. 45).

As with any new experience, student teaching is challenging, whether it is a positive or negative experience. Novice and student teachers are often concerned about the challenges of teaching content, as well as managing classroom procedures and student behavior (Johnson, Rice, Edgington, & Williams, 2005). A study by Fletcher, Mountjoy, and Bailey (2011) showed that classroom management was a primary concern for over 60% of the participants, all of whom were student teachers at the time. Student behavior and classroom management techniques are concerns for all teachers, and teacher education programs should promote active learning and practice in becoming skilled in dealing with these areas. Teachers, especially beginning teachers, often "compartmentalize 'teaching' and 'classroom management' … they should 'blend seamlessly to create an overall climate that supports student learning and achievement'" (Evertson & Neal, 2006, p. 1).

It is important for teachers to understand classroom management strategies and instruction practices that

support academic engagement. "Effective classroom management may significantly increase academic engagement for student with behavior problems" (Baker, Clark, Maier, & Viger, 2008, p. 1877). Crews and Stitt-Gohdes (as cited in Rader, 2008) stated that "Classroom management is central to effective, vigorous instruction" (p. 71). Student learning increases in a well-managed classroom. According to Guercio (2011), "Classroom management is an essential element in student learning and sustaining academic achievement" (p. 43). All students can benefit from a well-managed classroom. A "fundamental prerequisite" for academic success of at-risk students—an orderly classroom with a clear behavior management system, can encourage academic growth and create a sustainable learning environment (Kraft, 2010).

Moore (2009) defined classroom management as the "complex task of establishing and maintaining the classroom environment so learning goals can be accomplished" (p. 360). Thompson and Wheeler (2008) believed that the physical, intellectual, and emotional aspects of the classroom environment influence learning goals. This includes trust and a feeling of safety between students and teachers as well as among students. Evertson and Weinstein (2006) (as cited in Van Tartwijk, Brok, Veldman, & Wubbels, 2008) described classroom management as "the actions teachers take to create an environment that supports and facilitates both academic and social emotional learning" (p. 2). They identified four themes in the *Handbook of Classroom Management: Research, Practice and Contemporary Issues.*

Experience enhances teachers' classroom management abilities, and classroom management may be an ambiguous concept for new teachers, making it difficult for them to interpret the results of their actions. A situation may be considered disorder to a new teacher while an experienced teacher considers it order (De la Torre & Arias, 2007). New teachers are often unaware of the number of tasks involved in maintaining a productive classroom. They do not realize that many of their practices have an effect on the overall learning environment (Chitpin, Simon, & Galipeau, 2008). Experienced teachers can work with and provide feedback to new teachers to give them the necessary skills to cope with disruptive student behavior, which might help new teachers handle their classrooms with more confidence (Brouwers & Tomic, 2000).

There are a multitude of suggestions for classroom management techniques for beginning teachers in textbooks and scholarly journals. These suggestions are based on educators' experiences, observations, and research findings. Many teachers believe that the best approach to classroom management begins with preparation before the year begins (Rader, 2003). Rader (2003) recommended that novice teachers should prepare for classroom management by learning as much about the school as possible by establishing networks with colleagues and identifying resources. They should organize materials and arrange the room well before the start of school. The furniture in the classroom or laboratory should be placed where the teacher can observe all students and students can see the teacher (Rader, 2003).

According to Rader (2008), "Positive management strategies involve being prepared with content knowledge, being personally organized, planning properly, and organizing the classroom prior to the students' arrival" (p. 73). Other strategies suggested by Guercio (2011) are establishing control, creating effective discipline policies, building rapport with students, and determining the needs of students who may present behavior problems. These basic elements of creating a positive learning atmosphere through classroom management practices can greatly improve a teacher's ability to maintain control of the environment.

Another example of a skill most effective teachers utilize is building a foundation of guidelines to which students should adhere while in the classroom. Establishing procedures and routines for the students may be one of the easiest ways to increase positive behavior in a classroom. These should be established at the beginning of a

term and taught to the students (Thompson, 1998). Students should be provided with a brief list of rules for the classroom or lab that is consistent with school policy. On the first day of class, the rules should be presented in a positive way, including examples of desirable behavior (Rader, 2003).

Classroom procedures are the ways that teachers and students accomplish administrative routines, student movement, housekeeping, lesson routines, interactions between teachers and students, and talk among students. Although they are seldom written down, they are the way things get done in classrooms (Woolfolk, 2004). They "communicate behavioral expectations for specific situations" (Johnson et al., 2005, p. 30). However, according to Kraft (2010), teachers are often bombarded with behavior issues because they have too many rules and classroom values are not clearly differentiated from nonnegotiable expectations.

A positive teacher-child relationship is also an important part of effective classroom management. Teachers should be warm, responsive, caring, and supportive, as well as hold high expectations. Classroom management is a social and moral curriculum, and strategies relying on punishment and external rewards may negatively influence the classroom atmosphere. Teachers must take into account students' characteristics, such as ethnicity, cultural background, and socio-economic status (Van Tartwijk et al., 2008).

Teamwork and responsibility should also be taught to promote social and moral growth in students. Cooperative learning provides students with opportunities to practice responsibility and demonstrate teamwork. When each group member has responsibility for the success of a group, it reinforces appropriate behavior (Rowan, 2007). Career and technical education curriculum provides opportunities for teachers to plan cooperative learning activities and encourage interaction among students.

This idea should lead career and technical education teachers to decide on certain procedures and classroom management systems to be established specifically for career and technical laboratories. Teachers must be able to identify students who need assistance and maneuver around computers and other equipment to monitor students. Some business education teachers use procedures, like color-coded cups, flags, or cards for students to communicate their needs (Rader, 2008). These techniques, like many others, can create positive expectations for student behavior and promote a classroom of successful cooperative learning. R. J. Marzano, J. S. Marzano, and Pickering (2003) (as cited in Stone, 2011) found that effective teachers who can manage a classroom are able to use certain research-based strategies that direct student behavior, which leads to greater student engagement with content and activities. Such strategies can be taken from the multitude of tips and tactics learned in teacher preparation programs. This, in turn, leads to greater student achievement. However, it has also been suggested that:

> Reducing the number of strategies and models imparted, and focusing on a smaller range of proven effective strategies suitable for a wide range of problematic behaviours that are underpinned by theoretical models, could lead to greater perceptions of preparedness and confidence. (O'Neill & Stephenson, 2012, p. 1141)

An instructional approach to classroom management is based on the premise that "well-planned and well-implemented instruction will prevent most classroom problems … lessons that engage students in their own learning and afford them the opportunity to be successful learners will prevent and solve most management problems" (Moore, 2009, pp. 365-366). New teachers need to plan lessons based on standards to be taught and learning needs of the students. Daily objectives should be posted for the students (Johnson et al., 2005) and students should be aware of their own learning at all times. Classroom values should be promoted each day and students should be held to the responsibility of upholding these standards. Teachers who fail to

properly prepare and maintain classroom interactions are shown to have increased discipline problems, and administrators uphold that this leads to reduced instructor effectiveness and quality of student learning (Stone, 2011).

Monitoring student behavior allows a teacher to know what is happening in the classroom and to make proper time and targeted responses with firmness and clarity. The responses should not interfere with the other tasks the teacher is performing (Edwards, 2008). "Withitness" helps the teacher stop misbehavior before it spreads and increases in significance. "Overlapping" is the teacher's ability to manage multiple issues (Hardin, 2008). These skills as well as positive overall teacher efficacy can lead to reducing behavioral issues in the classroom. Also, how a teacher interprets behavior problems may actually affect the efficiency of the classroom as well.

Because CTE teachers' classroom management issues can be compounded as instruction often takes place in a complex learning environment, teachers should be well prepared to face the challenge. Lack of training, anxiety, and inexperience create overwhelming feelings of frustration and inadequacy in new teachers when faced with a difficult group of students (Kraft, 2010). According to Kraft (2010), when behavior problems arise, many teachers revert back to the "pacifying effects of worksheets and teacher-centered instruction", which, in turn, sacrifices the objective of student interaction and cooperative learning. Teachers should be prepared to handle situations where behavior problems emerge without compromising the enriching environment created by student-centered collaboration. This would create a more positive experience for novice teachers and help maintain a more optimistic view of the teaching profession.

This study is aimed at discovering factors influencing critical incidents in classroom management of recent student teachers and analyzing how the participants' perceptions of teaching were affected. Many instructional techniques and management strategies are available as resources to novice and student teachers and can better prepare them for the few inevitable behavior problems. Classroom management experiences play a vital role in how student or novice teachers view the notion of pursuing a career in education. If teachers could be thoroughly prepared, more of these experiences may turn out to be positive learning opportunities for growth and development. This, in turn, could help prevent negative views of professions in education, and specifically teaching in career and technical education.

Method

In order to answer the research questions, a survey study was designed to be administered electronically to the students who were student teaching currently. The survey consisted of eight open-ended questions that were developed by the researchers after a thorough review of literature. A pilot study was conducted with the students enrolled in a student teaching program.

After revisions to the original survey, the survey was electronically delivered to 23 students in the United States (US) and 33 in India. Two surveys from the US and two surveys from India were eliminated due to duplicate answers. All the participants were enrolled in a teacher preparation program. Both universities offered similar teacher preparation programs.

Participants

The students enrolled in a teacher preparation program and currently student teaching were asked to participate in the study. Twenty-one students from the US and 31 students from a comparable program in India responded to the survey.

Research Questions

The primary purpose of this research study was to determine how critical incidents in classroom management during student teaching can affect a person's view of the teaching profession. The secondary purpose of the study was to compare the perceptions between two major universities in different countries.

The following research questions guided this study:

1. How did the critical incidents affect the student teachers' perceptions of the teaching profession?

2. How could implications from the critical incidents be generalized to better prepare student teachers for their internship experiences?

3. What are the similarities and differences between student teachers' critical incidents at one major university in the US and a major university in India?

Procedures

The survey instrument was developed after a thorough review of literature. The questions were developed by the researchers and modified after a pilot study was conducted, resulting in eight significant questions. The survey was administered using Google Docs. The participants were allowed to expand on their responses, positively or negatively. All data were stored in Google Docs and analyzed using Microsoft Excel and Google Docs. In order to analyze the qualitative data, the information was coded using formulated meanings from the survey responses. Themes were created and added as the open-ended responses were analyzed. The end result was a summarized assessment of the information into relevant and concise themes.

When categorizing the critical incidents faced by each student teacher (Question 1), the researchers used the discipline coding system provided by the state Department of Education (G. Orr, personal communication, October 11, 2011). The coding system is a series of general discipline issues, each numbered for reporting and tracking purposes. The question, responses, and code names are illustrated in Table 1.

Table 1

Question 1: Describe Any Reoccurring Incidents Involving Classroom Management That Impacted Your Student (Pre-service) Teaching Experience

Significant statement (discipline incident)	Discipline code
US major institution	
1. Students not doing work	Class disruption (Code-5)
2. Students who would not participate, antagonized other students	
3. Students using MacBooks when they were not supposed to	
4. Behavior issues—disrupt class	
5. Cell phones/iPods/technology disruptions	
6. Cell phone usage by students	
7. Excessive cell phone usage and talking	
8. Not paying attention	
9. Students griping and complaining	
10. Students talking and not staying focused	
11. Very loud/rowdy—students in this class	
12. Cell phones	
13. Disruptions and talking	
14. Students using cell phones	
15. Truant students during field trips	Truancy (Code-32)
16. Students habitually cheated	Insubordination (Code-18)
17. Students cheating while taking a test	

(Table 1 to be continued)

18. Four students misbehaved, using bad language	Disorderly conduct (Code-6)
19. Learning disabilities—Disrespect	Disrespect (Code-7)
20. Students are not interested	
21. Getting students to settle down—Not very much older	
22. Cell phones/iPods/technology disruptions	Cell phone (Code-4)
23. Cell phone usage by students	
24. Excessive cell phone usage and talking	
25. Cell phones	
26. Students using cell phones	
India major institution	
1. Students making noise	Class disruption (Code-5)
2. Students making noise—not regular teachers—not able to manage the class	
3. Students making noise	
4. Students disturbing class, not following class rules, chatting, and fighting	
5. Students wandering here and there, making noise, and fighting	
6. Fighting among themselves, not paying attention, and bunking school	
7. Students disturbing class	
8. Students not paying attention, making noise, and never taking seriously	
9. Students constantly changing seats, fighting amongst themselves, and not interested in studying	
10. All students quarrel with each other and they make noise	
11. Some students do not answer questions and last bench students quarrel	
12. Students singing, some were passing some comments and some were discussing	
13. Students quarrel with each other and make noise	
14. Students making a lot of noise	
15. Talking together	
16. Making various types of noise and changing their places	
17. Students constantly changing seats, fighting amongst themselves, and not interested in studying	Disorderly conduct (Code-6)
18. Students passing notes	Broke class rules (Code-2)
19. Breaking class rules	
20. Bunking of lessons and lacking of enthusiasm (British term for skipping school)	Truancy (Code-32)
21. Fighting among themselves, do not pay attention, and bunk school	
22. Students trying to escape from class	
23. Students making noise—not regular teachers—free to do anything	Disrespect (Code-7)
24. Students quarrel, make noise, different animal voices	
25. Students were studying other subjects	
26. Students not paying attention, making noise, and never taking seriously	
27. New teacher, mischief	
28. Students made noise and asked funny questions	
29. Male students continuously staring at me	
30. Students made noise in the classroom	
31. Students were mischievous … disturbance during teaching	
32. Children making noise and talking	
33. Students fight among themselves, do not pay attention, and bunk	

Notes. Some students reported multiple recurring incidents. All incidents were reported.

Results

Eight open-ended questions were addressed to the participants. Question 1 asked student teachers to describe recurring incidents involving classroom management that impacted their student teaching experiences. Some students provided multiple responses for this question. All relevant responses were reported. The differences between the two universities and the discipline code category are shown in Table 2.

The similarities in discipline coding between the two universities were “class disruption”, “truancy”, “disorderly conduct”, and “disrespect”. The US institution also included “insubordination” and “cell phone use”. In India, the discipline code “broke class rules” was found to be a recurring theme.

Question 2 (see Table 3) asked the student teachers to describe the way they have dealt with this type of incident. The significant statements were categorized into common themes: corrective, verbal warning, and punitive. Of the 14 student teachers who responded from the US, six identified corrective, seven identified verbal warning, and one identified punitive as the preferred methods of dealing with the critical incidents. In India, of the 30 participants, 19 identified corrective, eight identified verbal warning, and three identified punitive as the preferred methods of dealing with the critical incidents.

Table 2

Differences Between the Two Universities and the Discipline Code Category

US major institution	India major institution
Cell phone (Code-4)	Broke class rules (Code-2)
Class disruption (Code-5)	Class disruption (Code-5)
Disorderly conduct (Code-6)	Disorderly conduct (Code-6)
Disrespect (Code-7)	Disrespect (Code-7)
Insubordination (Code-18)	Truancy (Code-32)
Truancy (Code-32)	

Table 3

Question 2: Describe the Way You Have Dealt With This Type of Incident

Significant statement	Formulated meaning	Theme
US major institution		
1. Referral was issued	Refer to administrator	Corrective
2. Made each student a folder with all his/her work	Modify student work	Corrective
3. Asked students to put cell phones away	Consistent verbal warning	Verbal warning
4. Not allowed to sew on machine	Depriving student privileges	Punitive
5. Used activities to get students involved from the get go	Incentives	Corrective
6. Told them to put it (cell phone) away or the teacher would take it up	Verbal warning	Verbal warning
7. Took phone away; talking	Remove distraction and verbal warning	Corrective
8. Told students “all eyes on me” and turned off monitors	Verbal warning	Verbal warning
9. Presented students with the option of a detention	Verbal warning	Verbal warning
10. Asked them to quit talking, turned off monitors, assigned lunch detention when necessary, and seating chart	Verbal warning	Verbal warning
11. Used book to answer questions and free writes	Writing assignments	Corrective
12. Warning once, then removal of the cell phone	Verbal warning	Verbal warning
13. Kept students busy and warned them detention	Verbal warning	Verbal warning
14. Followed handbook procedures	Follow school rules	Corrective

(Table 3 to be continued)

India major institution		
1. Not able to handle	Refer to mentor teacher	Punitive
2. Located the origin of the problem	Individual meeting with student	Corrective
3. Designed activities for team work and dialogued with students	Modify assignment and one on one meeting with student	Corrective
4. Marks would be considered as exam marks	Verbal warning	Verbal warning
5. Seating arrangement made where all students can sit in the first four rows	Seating chart	Corrective
6. Used various teaching aids and communicated in a loud voice	Variety of teaching aids and raise voice	Corrective
7. Told some stories, arranged some games, and used technology	Variety of teaching aids	Corrective
8. Punished students by making them stand during lecture	Physical punishment	Punitive
9. Seated students in the first bench and asked questions	Seating arrangement and questioning	Punitive
10. Told students the importance of study and told moral stories	Verbal reprimand	Verbal warning
11. Explained the importance of the discipline; backbenchers made to sit in front	Verbal warning and seating arrangement	Verbal warning
12. Continuously walking	Keeping close proximity to students	Corrective
13. Conducted experiment with the help of students	Student involvement	Corrective
14. Conducted student activity and call on students who are making noise	Student involvement	Corrective
15. Started a story to draw their attention	Storytelling	Corrective
16. Found out the reasons of constant place changing and used examples to explain subject	Observe and analyze and use examples	Corrective
17. Used different audio-visual aids	Variety of teaching aids	Corrective
18. Students told to pay attention as it will be on unit test	Verbal warning	Verbal warning
19. Used different teaching aids	Variety of teaching aids	Corrective
20. Used advanced technology and storytelling	Variety of teaching aids and storytelling	Corrective
21. Used technology based lessons and said do not quarrel	Variety of teaching aids and verbal warning	Verbal warning
22.Asked questions, used teaching aids, and seated in front bench	Variety of teaching aids, seating chart, and questioning	Corrective
23. Changed the student's sitting position that quarrel to first bench, met this student personally, and understood his/her problems and solved it	Seating chart and one on one meeting with student	Corrective
24. Explained importance of discipline and counselled students bunking lecture	One on one meeting with student	Corrective
25. Explained importance of discipline and made back benchers sit in front	Storytelling and seating chart	Corrective
26. Told them some stories and used technology-based lessons	Storytelling and variety of teaching aids	Corrective
27. Tried to keep them engaged	Student involvement	Corrective
28. Warned them not to make noise	Verbal warning	Verbal warning
29. Told class to keep quiet and listen to me and asked questions	Verbal warning and questioning	Verbal warning
30. Gave clear instructions regarding showing of teaching aids	Verbal warning	Verbal warning

Question 3 (see Table 4) asked the participants to describe how another teacher or mentor teacher helped handle the incident. The majority (32/52) of the responses from both institutions reported that the mentor teacher indirectly helped by offering advice. Twenty-one of the respondents reported that the mentor teacher directly helped by taking over the situation.

Question 4 (see Table 5) asked the participants to identify which of the responses were successful from those reported in Question 2. The student teachers from the US and India reported that the majority of responses were successful with the exception of "threatening detention and taking away points for the rest of

the day" (US student teachers) and India student teachers reporting "class teacher" and "interesting teaching aids, loud voice, and incentives" as being unsuccessful techniques in handling critical incidents. Overall, both groups of students reported similar responses. Students from both institutions provided multiple responses.

Table 4

Question 3: Describe How Another Teacher or Your Mentor Teacher Helped You Handle the Incident

Statement	Formulated meaning	Theme
US major institution		
1. My mentor teacher gave them a warning	Mentor teacher gave advice	Indirect
2. Reinforced my decision	Mentor reinforced decision	Indirect
3. Mentor spoke to students in private	Mentor took care of it	Direct
4. Mentor suggested that I rearrange seating	Mentor teacher gave advice	Indirect
5. Mentor watched student behavior	Mentor took care of it	Direct
6. Mentor encouraged me to be more strong-handed	Mentor teacher gave advice	Indirect
7. Mentor attempted everything	Mentor teacher took care of it	Direct
8. Mentor guided me	Mentor teacher gave advice	Indirect
9. Administrators decided to give him a folder	School personnel implemented student action	Direct
10. Mentor teacher helped in getting me organized	Mentor teacher gave advice	Indirect
11. Mentor teacher has my back in discipline	Mentor teacher gave advice	Indirect
12. Mentor teacher helped in this situation	Mentor teacher gave advice	Indirect
13. Mentor teacher has an answer for everything	Mentor teacher gave advice	Indirect
14. Mentor teacher told students they are rude	Mentor teacher took care of it	Direct
15. Mentor teacher was very supportive	Mentor teacher gave advice	Indirect
16. Mentor teacher told me to have students turn their monitors off	Mentor teacher gave advice	Indirect
17. Principals suggested writing detentions	School administrator teacher took care of it	Direct
18. Mentor teacher recommended seating chart	Mentor teacher gave advice	Indirect
19. Mentor teacher talked to the class	Mentor teacher took care of it	Direct
20. Mentor teacher suggested warning	Mentor teacher gave advice	Indirect
21. Mentor teacher helped with consequences	Mentor teacher gave advice	Indirect
India major institution		
1. I was given detention forms	Mentor teacher gave advice	Indirect
2. Supervisors told me to give up and told me to ignore them	Mentor teacher gave advice	Indirect
3. Guidance in counseling	Mentor teacher gave advice	Indirect
4. Advised me to communicate and listen	Mentor teacher took care of it	Indirect
5. Class teachers took control	Mentor teacher took care of it	Direct
6. Mentor teacher gave look to students	Mentor teacher took care of it	Direct
7. Class teacher took control over class	Mentor teacher took care of it	Direct
8. Mentor teacher helped me handle the incident and keep classroom silent	No mentor teacher action	Direct
9. Peer group friend advised	Mentor teacher gave advice and took care of it	Indirect
10. Teachers gave guidelines and helped control the class	Mentor teacher gave advice	Direct
11. Mentor teacher gave me suggestions	Colleagues gave advice	Indirect
12. Gathered information from colleagues	Subject teacher took care of it	Indirect
13. Subject teacher scolded the students	Mentor teacher gave advice	Direct
14. Mentor teacher gave advise to use teaching aids and involved students	Mentor teacher took care of it	Indirect
15. Mentor helped keep them quite	Mentor teacher took care of it	Direct

(Table 4 to be continued)

16. Mentor teacher tried to calm students	Fellow teachers took care of it	Direct
17. Fellow teachers sat next to students	Fellow teacher gave advice	Indirect
18. Fellow teacher helped me	Mentor teacher took care of it	Indirect
19. Mentor teacher told the students that every student is assessed	Fellow teacher gave advice	Direct
20. Fellow teacher suggested different reference book	Mentor teacher took care of it	Indirect
21. Mentor teacher helped keep silence	Mentor teacher took care of it	Direct
22. Mentor teacher handled incident	Mentor teacher gave advice	Direct
23. Mentor teacher helped in guiding the students	Fellow teachers gave advice	Indirect
24. Colleagues helped me to control classroom and tell me how to communicate with students	Fellow teachers gave advice	Indirect
25. Colleagues helped in classroom management and understood the problems of the students	Mentor teacher gave advice	Indirect
26. Mentor teacher encouraged us with giving moral support and tips in controlling the class	Mentor teacher took care of it	Indirect
27. Mentor teacher helped me to handle the incident	Fellow teachers and mentor teacher gave advice	Direct
28. Colleagues and teacher made them aware about teaching aids and engaging in lecture	Bed teacher advised	Indirect
29. My teacher advised me to conduct the experiment in such a way that everyone can see and make suggestions	Subject teacher took care of it	Indirect
30. Subject teacher told them to keep quite	Fellow teachers and mentor teacher gave advice	Direct
31. Colleagues and teachers made them aware about teaching aids presentation	Fellow teachers and mentor teacher gave advice	Indirect

Table 5

Question 4: Which of Your Responses in Question 2 Were Successful?

Significant statement	Formulated meaning	Theme
US major institution		
1. Locking our students' screens is definitely successful because they cannot do anything else	Successful	Independent
2. The three "strike" system worked well	Successful	Independent
3. Threatening detention and taking away points usually work for the rest of the day, but problems persist throughout the week	Not Successful	Dependent
4. Changing seating arrangement and dimming the lights	Successful	Independent
5. Moving students	Successful	Independent
6. Possibility of additional punishment	Unsuccessful	Independent
7. None of them	Unsuccessful	Dependent
8. All have proven unsuccessful	Unsuccessful	Dependent
9. Test modifications have been successful; folder has been successful	Successful	Independent
10. Excluded	Excluded	Excluded
11. All responses seemed to be successful	Successful	Independent
12. Got students on task	Successful	Independent
13. Getting students involved	Successful	Independent
14. Do not have to tell students twice in the same day	Successful	Independent
15. Taking away the phones	Successful	Independent
16. Turned off monitors, forced them to stop working, and wrote it on the board allowed them to review the information	Successful	Independent
17. If students do not complete classwork, we have a lunch detention	Successful	Independent
18. Seating chart was effective	Successful	Independent
19. Individual assignments worked best	Successful	Independent
20. Warning and being consistent worked fairly well	Successful	Independent

(Table 5 to be continued)

21. Losing lunch privileges, referral, and contacting parents	Successful	Independent
22. Excluded	Excluded	Excluded
23. Using the handbook	Successful	Dependent
India major institution		
1. Offered them incentives	Unsuccessful	Independent
2. Finding out the original cause of the issue and avoiding public embarrassment	Successful	Independent
3. Dialogue and discussion	Successful	Independent
4. Interesting teaching aids, loud voice, and incentives	Unsuccessful	Independent
5. Both strategies were successful	Successful	Dependent
6. Used teaching aids	Successful	Independent
7. Technology-based teaching	Successful	Independent
8. Punished them to stand in front of class	Successful	Independent
9. Asked students questions and gave rewards	Successful	Independent
10. Warned them about their teachers and told moral stories	Successful	Independent
11. Excluded	Excluded	Excluded
12. Narrated stories to students and made fighting/quarreling students sit together	Successful	Independent
13. Continuously asking questions	Successful	Independent
14. Participation of students	Successful	Independent
15. Used pictures and photos and experiments to involve the students	Successful	Independent
16. Class teacher helped maintain silence	Unsuccessful	Dependent
17 Getting students involved	Successful	Independent
18 Technology while teaching	Successful	Independent
19 To some extent all	Successful	Independent
20. Used different teaching methods	Successful	Independent
21. Storytelling	Successful	Independent
22. Technology-based lessons	Successful	Independent
23. Developed friendship among students	Successful	Independent
24 Changed the sitting arrangement of students	Successful	Independent
25.Narrated stories and made quarreling students sit together	Successful	Independent
26. Explained the importance of discipline through the story	Successful	Independent
27. Storytelling and technology-based lessons	Successful	Independent
28. Rewards, motivation, and some scolding	Successful	Independent
29. Included techniques that teacher asked me to	Successful	Independent
30. Different questions and introductions given by students	Successful	Independent
31. Teaching aids made effective impact	Successful	Independent

In response to Question 5 (see Table 6), the student teachers in both countries stated that they found that experience in the situation helped them deal with the critical incident situation more than anything else. Responses were categorized into personality, experience/teaching strategy, and having a role model. The majority of responses were experience/teaching strategy for both groups with very similar responses reported. “Having patience” and “having knowledge of characteristics of adolescent age groups” were common statements from both groups. Themes were identified and categorized as intrinsic and extrinsic. Multiple responses were provided by some of the participants. For Question 6, students were asked how the incident affected his/her choice to become a teacher (see Table 7). Statements were categorized into positive, neutral, or negative. Of the US student teachers, all the students reported that it affected their choice in either a positive or neutral way; one student teacher chose not to answer the question. Of the student teachers from India, all but

one reported that it affected their choice to become a teacher in a positive way; one student teacher chose not to answer the question; and one reported that it affected his/her choice in a negative way. Overwhelmingly, the incident affected the decision to be a teacher in a positive way. Common statements from both groups were "I loved my student teaching", "This incident taught me to solve problems", and "This has not affected my choice".

Table 6

Question 5: What in Your Past Experience Helped You Deal With the Situation?

Significant statement	Formulated meaning	Theme
US major institution		
1. It helped to be nice and forceful	Personality	Intrinsic
2. If you do not deal with behavior problems, they will continue	Personality	Intrinsic
3. I was in an authority position as a teacher	Personality	Intrinsic
4. I have a great deal of patience and think of rational solutions without losing my patience	Personality	Intrinsic
5. I have learned to deal with all types of people and keep a level head	Personality	Intrinsic
6. My interaction with kids of all ages has aided me	Experience	Intrinsic
7. My children taught me patience	Experience	Intrinsic
8. I knew raising my voice being demanding and bossy just gives students fuel to act out	Personality	Intrinsic
9. I knew high school kids want to be included, not distanced	Experience	Intrinsic
10. Learning organizations has helped me become organized	Role model	Intrinsic
11. Working with high school students in different settings	Experience	Intrinsic
12. Not applicable (NA)	NA	NA
13. Working with kids in general	Experience	Intrinsic
14. I have had teachers take up phones	Experience	Intrinsic
15. My classroom management professor encouraged me to be open minded	Role model	Extrinsic
16. Being a student helped me learn to stay calm and find a way to solve the problem	Experience	Intrinsic
17. I tried to talk to the students	Experience	Intrinsic
18. Watching my mentor was helpful	Role model	Extrinsic
19. I have been in classrooms subbing or observing	Experience	Intrinsic
20. My mentor teacher helped me	Role model	Extrinsic
21. I worked at Northwest Arkansas children's shelter	Experience	Intrinsic
22. No incidents	NA	NA
23. I followed rules set by school district	Role model	Extrinsic
India major institution		
1. I followed trial and error method	Experience	Intrinsic
2. Guidance from my school teachers	Role model	Extrinsic
3. Relating it to everyday contexts	Experience	Intrinsic
4. Experience and suggestions from Bachelor of Education (B.Ed.) teachers	Role model	Extrinsic
5. I remembered my school days	Experience	Intrinsic
6. Updated knowledge helped me	Method/strategy	Extrinsic
7. Past experience with technology and storytelling	Method/strategy	Extrinsic
8. Experience shared by other teachers	Role model	Extrinsic
9. Understood psychology of students	Personality	Intrinsic
10. Learning by doing	Experience	Intrinsic
11. Excluded	NA	NA
12. Kept myself in shoes of students	Personality	Intrinsic
13. My mother is a teacher and she shared her experience	Role model	Extrinsic

(Table 6 to be continued)

14. I tried to be more of a friend	Personality	Intrinsic
15. Gave interesting activities and experience	Method/strategy	Extrinsic
16. A poem helped	Method/strategy	Extrinsic
17. I handled certain things with patience	Personality	Intrinsic
18. I used my English knowledge	Experience	Intrinsic
19. Having knowledge of characteristics of adolescent age groups	Method/strategy	Extrinsic
20. Previous knowledge of Marathi	Method/strategy	Extrinsic
21. Play way method and storytelling method helped	Method/strategy	Extrinsic
22. My past experience	Method/strategy	Extrinsic
23. Good effects of stories	Method/strategy	Extrinsic
24. Follow rules	Personality	Intrinsic
25. Good effect of stories on students	Method/strategy	Extrinsic
26. Monitor classrooms	Method/strategy	Extrinsic
27. All past experiences	Experience	Intrinsic
28. Play and learn method experienced by me and my school life	Method/strategy	Extrinsic
29. Students must be reassured	Personality	Intrinsic
30. Telling story to my daughter	Method/strategy	Extrinsic
31. Followed tricks used by my school teachers	Experience	Intrinsic

Table 7

Question 6: How Did This Incident Affect Your Choice to Become a Teacher?

Significant statement	Formulated meaning
US major institution	
1. I loved my student teaching	Positive
2. Did not affect it	Neutral
3. Not negatively affecting my choice	Neutral
4. Made me realize that I enjoy teaching	Positive
5. The incidents did not affect my choice	Neutral
6. I am not discouraged	Positive
7. I want to be a teacher	Positive
8. It is still currently affecting my choice	Neutral
9. It did not affect any choice	Neutral
10. This was not a great factor	Neutral
11. Did not affect my choice	Neutral
12. I still plan to be a teacher	Positive
13. I have loved my experience	Positive
14. Has not affected my decision	Neutral
15. Did not affect my choice	Neutral
16. I wanted to help students enjoy learning	Positive
17. My choice was made prior to this incident	Neutral
18. This has not affected my choice	Neutral
19. I realized that it was not just myself they were treating bad	Positive
20. NA	NA
21. I knew that I wanted to help them learn	Positive
India major institution	
1. We have to work accordingly	Positive
2. It boosted my commitment	Positive

(Table 7 to be continued)

3. Students appreciated my work	Positive
4. We have to work accordingly	Positive
5. This is a very challenging field	Positive
6. I have to work with those children with problems	Positive
7. I decided to always use technology based lessons and storytelling	Positive
8. Experience with these problems is temporary	Positive
9. We learn to develop all skills	Positive
10. I felt that this job is not suitable for me	Negative
11. Excluded	NA
12. Help understand the problems of classroom and develop ability to handle situations	Positive
13. Students motivate me to become a teacher	Positive
14. I learned from incidents in a positive way	Positive
15. I decided to become a teacher	Positive
16. I understood the importance of being a teacher	Positive
17. It did not deter me—I learned from this experience	Positive
18. My higher education was very useful	Positive
19. Adolescents motivate me to become a teacher	Positive
20. My higher education was very useful	Positive
21. What students expect from teachers was understood	Positive
22. I use all my skills to become a teacher	Positive
23. I was very happy	Positive
24. This incident taught me to solve problems	Positive
25. I know that becoming a teacher is a challenge for me	Positive
26. Teachers have to take care of student psychology and teaching atmosphere	Positive
27. This incident affected my choice to use technology-based lessons	Positive
28. I decided to become a teacher	Positive
29. Adolescents have to be handled carefully	Positive
30. The teaching process is very nice	Positive
31. I want to become a good teacher	Positive

In Question 7 (see Table 8), the student teachers were asked how their teacher education program prepared them for the incidents they experienced. This question had the most common response of all the questions. The statements were categorized into formulated meanings of relevant content and discussion with others. The majority of the students in both countries reported that the relevant content in their program prepared them. Four student teachers in the US reported that their teacher education program did not prepare them for critical incidents. All the student teachers in India reported that the content of their teacher education program or discussion with others helped prepare them for critical incidents.

Table 8

Question 7: How Did Your Teacher Education Program Prepare You for Incidents Like This?

Significant statement	Formulated meaning
US major institution	
1. Knowing to stay calm and handle situations	Relevant content
2. Gave me the skills necessary to handle these situations	Relevant content
3. Being able to speak to other current student teachers has helped	Discussion with others
4. Classroom management class gave examples and solutions	Relevant content
5. It does not	NA
6. My program did not prepare me for these instances	NA

(Table 8 to be continued)

7. It did not	NA
8. It did not	NA
9. I got to collaborate with other teachers and faculty about the students	Discussion with others
10. The teacher education program wanted things done in an organized manner. I still used the techniques in my lesson plans to help keep me organized	Relevant content
11. They prepared me in all areas of classroom management	Relevant content
12. We talk about differentiated learning	Relevant content
13. I have been given numerous materials	Relevant content
14. My professors have addressed this issue and encouraged me	Discussion with others
15. The classroom management class prepared me for cell phone usage	Relevant content
16. Helped me learn successful different strategies	Relevant content
17. Professional development on management and behavior	Relevant content
18. Classroom management class was helpful for these types of incidents	Relevant content
19. Prepared me in adjusting the type of activities and lessons that I planned	Relevant content
20. Very well	Relevant content
21. Classroom management course was effective and the teaching internship was most helpful	Relevant content
India major institution	
1. Helped in facing various types of children and how to interact with them	Relevant content
2. Learning of educational psychology helped me	Relevant content
3. Orientation workshop	Relevant content
4. Helped with facing various types of children and how to interact with them	Relevant content
5. Experienced actual situation which we have studied in teacher education program	Relevant content
6. How to face critical conditions in every type of child	Relevant content
7. It used all skills of training period	Relevant content
8. Useful for who wants to become a teacher	Relevant content
9. Used B.Ed. training skills according to situation	Relevant content
10. Got many ideas or clues on how to solve problems and confidence levels was grown-up	Discussion with others
11. Excluded	Relevant content
12. Learned child psychology through internship and how to apply different teaching methods	Relevant content
13. Instead of giving punishment, catch their attention through activity	Relevant content
14. Microteaching	Relevant content
15. Learned many techniques and went through the orientation program for each subject	Relevant content
16. Microteaching	Relevant content
17. Child psychology	Relevant content
18. Increased my confidence	Relevant content
19. Educational psychology	Relevant content
20. Increased confidence	Relevant content
21. Child psychology	Relevant content
22. Make learning interesting	Relevant content
23. Child psychology	Relevant content
24. How to share our knowledge with students and how to maintain relation with students	Relevant content
25. Child psychology	Discussion with others
26. Child psychology	Relevant content
27. Used all skills of my training	Relevant content
28. Microteaching	Relevant content
29. Microteaching	Relevant content
30. Understand student behavior pattern and problems to prepare for incidents	Relevant content
31. Psychology helped us to understand the psychology of the students	Relevant content

In Question 8 (see Table 9), the student teachers were asked what helped them manage classroom behavior/incidents during their student teaching internship. The number one response was guidance from the mentor teacher and consulting with other teachers. Having a dedicated mentor teacher was greatly valued by the student teachers and it was evident that most of them had a positive experience.

Table 9

Question 8: What Helped You Manage Classroom Behavior/Incidents During Your Student Teaching Internship? How Was This Helpful?

Significant statement	Formulated meaning (What helped you manage classroom behavior/incidents during internship?)	Theme (How was this helpful?)
US major institution		
1. The Lan school really helped monitor the integrated class	Lan school	Use of technology/teaching aids
2. My understanding of student behavior and how to systematically handle problematic situations	Understanding of student behavior	Understanding of student behavior
3. Consulting with my mentor and other teachers has been extremely helpful because they have been around it long enough to know what works and what does not work. Keeping them too busy to have behavioral issues	Consulting with other teachers; time on task	Discussion with others
4. Encourage students to work together	Student encouragement	Demonstrating self confidence
5. Gaining the respect of my students by respecting and honestly caring about each of them	Showing respect for students	Understanding of student behaviors
6. Mentor teacher's guidance and a level attitude	Showing respect for students	Understanding of student behaviors and discussion with others
7. Guidance and structure from mentor teacher	Showing respect for mentor and students	Discussion with others and demonstrating self-confidence
8. Packing every minute with something for students to work on	Time on task	Understanding teaching techniques and student behavior
9. Talking with students laid a foundation of respect	Showing respect for students	Understanding of student behavior
10. Seeing how teachers handle classroom behavior and adapting those to my own style	Consulting with other teachers	Discussion with others; demonstrating self-confidence and understanding of student behavior
11. My mentor helped me learn new and better ways to approach behavior issues	Guidance from mentor teacher	Understanding student behavior and discussion with others
12. Showing respect, being interested in students, and making a seating chart	Showing respect for students	Understanding student behavior
13. Mentor teacher	Guidance from mentor teacher	Discussion with others
14. Classroom management class	Classroom Management course	Understanding teaching techniques
15. Mentor teacher	Guidance from mentor teacher	Discussion with others
16. A positive relationship with students	Showing respect for students	Understanding student behavior
17. Knowing the administration will follow through	Administrative support	Discussion with others
18. Sticking to threats and punishments	Teacher control	Understanding student behavior
19. Mentor teacher and classroom management class	Guidance from mentor teacher and classroom management course	Discussion with others
20. Mentor teacher	Guidance from mentor teacher	Discussion with others
21. University courses and being a parent	University course and parental experience	Understanding teaching techniques and demonstrating self-confidence

(Table 9 to be continued)

India major institution		
1. Support from mentor teacher	Guidance from mentor teacher	Discussion with others
2. University teacher, colleagues, and school supervisors	Guidance from colleagues	Discussion with others
3. Training to become a nun	Religious training	Discussion with others
4. Keeping my cool and anticipating problems	Composure	Understanding of student behavior and demonstrating self-confidence
5. My B.Ed. teachers	University teachers	Understanding teaching techniques
6. Simulation lessons and microteaching	Practice lessons	Understanding teaching techniques
7. B.Ed. teacher, peer group, and trainings	Guidance from colleagues	Understanding teaching techniques and discussion with others
8. All my teachers	Guidance from teachers	Understanding teaching techniques and discussion with others
9. Teaching aids and technology	Teaching aids	Use of technology/teaching aids
10. Teacher guidelines	Rules and procedures	Understanding teaching techniques
11. Teaching aids, technology, and new techniques of teaching	Teaching aids	Use of technology/teaching aids
12. School teachers, friends, students, and Information and Communication Technology (ICT)	Guidance from colleagues	Discussion with others
13. Subject teachers	Guidance from colleagues	Discussion with others
14. My unique and interactive teaching	Self-confidence	Demonstrating self-confidence
15. Technology and audio-visual aids give real experience	Teaching aids	Use of technology/teaching aids
16. I used overhead projector (OHP) to show different pictures	Teaching aids	Use of technology/teaching aids
17. Discussion	Guidance from colleagues	Discussion with others
18. Previous practice lessons	Practice lessons	Understanding teaching techniques
19. Discussion with friends and guidance given by subject teacher	Guidance from colleagues	Discussion with others
20. Practice lessons	Practice lessons	Understanding teaching techniques
21. School teachers, ICT, and parents	Guidance from colleagues and parents	Discussion with others
22. Friends and my teacher	Guidance from colleagues and parent	Discussion with others
23. School teachers, friends, and ICT	Guidance from colleagues	Discussion with others
24. Past experience	Self-confidence	Demonstrating self-confidence
25. School teachers, friends, and ICT	Guidance from colleagues	Discussion with others
26. Teaching aids, audio-visuals, and guidance by teachers	Teaching aids	Use of technology/teaching aids
27. Teachers, friends, and parents	Guidance from colleagues and parent	Discussion with others
28. B.Ed. course	University course (B.Ed.)	Understanding teaching techniques
29. Methods teachers	University teachers	Understanding teaching techniques
30. Teaching aids, audio-visual	Teaching aids	Use of technology/teaching aids
31. B.Ed. course	University course (B.Ed.)	Understanding of teaching techniques

Conclusions

The goal of this research study was to determine how critical incidents in classroom management during student teaching can affect a person's view of the teaching profession. The secondary purpose of the study was to compare the perceptions between two major universities in different countries.

Research Question 1

When analyzing the data to answer Research Question 1: How did the critical incidents affect the student

teachers' perceptions of the teaching profession? In order to analyze this question, the researchers identified the critical incidents that were reported and assigned each one to a code that was used at the time by a state Department of Education. The most common critical incidents reported by the US student teachers were cell phone usage, class disruption, disorderly conduct, disrespect, insubordination, and truancy. The student teachers from India reported break class rules, class disruption, disorderly conduct, disrespect, and truancy. Critical incidents common to both groups were class disruption, disorderly conduct, disrespect, and truancy.

With the guidance of the mentor teacher, the critical incidents reported did not affect the student teachers' decisions to become a teacher. The student teachers from both countries appeared to be well prepared for the critical incidents experienced. The importance of a mentor teacher was stated several times by both groups.

Research Question 2

For Research Question 2: How could implications from the critical incidents be generalized to better prepare student teachers for their internship experiences? Several themes emerged. Teacher preparation programs that are strong in content are critical. An overwhelming majority of the student teachers stated that the "relevant content" prepared them for the critical incident followed by "discussion with others". Preparing students in the content knowledge for the student teaching experience and identifying key mentor teachers are key factors for the success in dealing with critical incidents.

Research Question 3

Regarding Research Question 3: What are the similarities and differences between student teachers' critical incidents at one major university in the US and a major university in India? We identified more similarities than differences. Perhaps the use of cell phones in the schools was the biggest difference. Cell phone usage in American classrooms is quite common; however, the opposite is true for the Indian classrooms. Both groups reported critical incidents in class disruption, disorderly conduct, disrespect, and truancy. The mentor teacher becoming directly or indirectly involved in the incidents, which was reported by both groups. Both groups also reported that having experience helped them deal with the situation. The student teachers in India identified method/strategy most often. An overwhelming majority of the students in both groups reported that the critical incidents did not affect their choice to become a teacher. Teacher education programs having relevant content were a major factor in dealing with critical incidents as well as discussing the critical incidents with others. Student teachers who are prepared in the content and comfortable discussing the critical incidents with other people seem to be able to deal with the critical incidents effectively. Student teacher preparation, content knowledge, and collaborating and communicating with the mentor teacher are all important factors in handling a critical incident. The student teachers in both countries identified verbal warning and corrective action as the most preferred ways in dealing with a critical incident. Both groups reported punitive measures, but it was used the least of all.

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Phonetic Considerations in Metaphors*

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It was found that English as a foreign language (EFL) learners had problems understanding metaphors. In previous studies, the metaphors in the song lyrics under investigation were analyzed. A correspondence which merits further research is the shared phonetic shape of the metaphors. The relation between sound and meaning is generally assumed to be arbitrary. Nevertheless, in the past decades, cross-linguistic data on sound symbolism have shown some significance in language that scholarship should recognize. There has been less work on the relationship between sound symbolism and metaphor; hence, the present study focuses on the interactions between phonetics and metaphors. The attempt is to provide a phonetic consideration on the metaphors collected in previous studies and to infer the existence of additional variables which might be relevant to metaphor description; in effect, concrete and abstract metaphors may be at play. These analyses are expected to provide consolidation for English teachers' linguistic foundation.

Keywords: metaphor, phonetics, English as a foreign language (EFL)

Introduction

It was found that the students of English as a foreign language (EFL) had problems comprehending the non-literal meaning of metaphors. Many words have literal, non-literal, and metaphorical interpretations. The suggestive meanings of the metaphors designated are used implicitly or explicitly to mean something else. In other words, a metaphor is used to express ordinarily one thing or concept, but its literal meaning designates another thing or concept. Even though the purpose of translation is to bridge the thoughts and concepts from one language to another, it is indeed a challenge for EFL learners to decipher the metaphorical meaning of the original ideas and thoughts in the target language. Since metaphors were found to be a common area of students' weakness in learning, the purpose of Luo's (2010) study was thus to analyze the metaphors in the songs used in the studies during 2008-2010. A correspondence which merits further study is the shared phonetic shape of metaphors. Therefore, the aim of the present study would focus on the interactions between phonetics and metaphors, and the analysis provided is expected to offer consolidation for English teachers' linguistic foundation.

Generally, it is assumed that the relation between sound and meaning is arbitrary. Aspects of language against this assumption have traditionally been considered only as exceptional to the general rule. Nevertheless, in the past decades, cross-linguistic data on sound symbolism have shown some significance in language that scholarship should recognize (Hinton, Nichols, & Ohala, 1994). For example, Ultan (1978) found that in nearly 90% of the languages under his research that had diminutive marking, the diminutive was symbolized by high front vowels. Hines (1996) went "challenging the tenet of 'the arbitrariness of the sign'" (p. 196) in her metaphor

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description. Recently, Carlson and Gerfen (2011) linked the distribution of diphthongs to a general and crosslinguistic tendency for words with productive morphology to be phonologically marked. There has been less work on the relationship between sound symbolism and metaphor; hence, to consolidate English teachers' linguistic foundation, the present study would focus on the interactions between phonetics and metaphors.

The analyses of metaphors were further divided into two categories, namely, concrete and abstract. These two terms are assigned based on the forms of the metaphor. For instance, "Students are plants and teachers are gardeners" is a metaphor containing concrete things, like plants and gardeners. Its metaphorical meaning would be that students are just like plants in the garden and need gardeners to take care to grow up. The conceptual mapping links "students" to "plants" in the garden that need the care of the gardeners to grow up and links "teachers" to "gardeners" who take care of the plants in the garden. "Walls have ears" is another example of concrete metaphor that contains concrete things, like walls and ears. It can be interpreted as "People may be listening even when you think they are not because you do not see them". In this sentence, the conceptual mappings link "ears" to "listening" and "walls" to "unseen people". The concrete form of metaphors is usually relatively easier to understand compared to the abstract form of metaphors. For example, "The streets have run crazy…" in O. Henry's (1985) story of "The Last Leaf" might not be easy for students to understand. In the sentence, "crazy" is an abstract notion that is usually used to describe the mental condition. The mental adjective "crazy" is used figuratively here to mean the way that the streets are laid out is not normal (Luo, 2005).

The following sections of the current study include discussions of previous research and identifications and analyses of the "core" elements of the metaphors in terms of their phonetic features and phonological markedness. Then, the interactions between phonetics and metaphors would be generalized and characterized tentatively according to the contrast of concreteness and abstractness.

Metaphor

Metaphor is an important component of language creativity and also is a significant part of people's conceptual systems (Gibbs & Steen, 1999). Several studies (Lakoff, 1987; 1990; Lakoff & Johnson, 1980; Lakoff & Turner, 1989; Fiumara, 1995; Gibbs, 1994; 1996; Fauconnier, 1994; 1997; Goatly, 1997; Gibbs & Steen, 1999) have shown that metaphor is fundamental to the human thinking process. Goatly (1997) said, "Metaphor and the mental processes it entails are basic to language and cognition" (p. 1). Lakoff and Johnson (1980) further pointed out that human beings think and act through the means of metaphor which is permanent in not only language, but also thought and action. The use of metaphors shows how human beings conceptualize their worlds and function within them. The conceptualized metaphors structure how human beings perceive the world, how they live in the world, and how they interact with other people (Su, 2007). Su (2007) claimed that "The generalizations that are captured by metaphor are not in language, but in thought. They have to do with conceptualizing one mental domain with another. They have to do with cross-mapping from one domain to another" (p. 7). In other words, abstract concepts, like time, states, change, and causation in our everyday life, are all metaphorical. "Metaphor" is not just a surface ornamentation of language but human thinking processes. It is the phenomenon whereby we talk and, potentially, think about something in terms of something else. For example, in the sentence, "The war against drugs", the word "war" is used here as a strong word for "fight" to show the determination of reducing the number of drug addicts (Cameron, 2003). In the above example, the speaker is talking about drug fight in terms of war. The concept of war is frequently used metaphorically in our daily life. This will be discussed further later.

Metaphors serve as a basic cognitive structure and a mechanism that enables people to understand a relatively abstract concept and perform abstract reasoning (Yu, 1998). The reason that people are capable of adapting concrete language to refer to an abstract concept and vice versa is because they are able to combine language concepts with their experiences in the real world and stretch the concepts and the experiences to refer to various related or non-related concepts. Mey (1993) proposed that "Metaphors are conceptual means of dealing with the world which have become accepted within a given linguistic and cultural community" (p. 62). That is, metaphor is a way of life because different ways of life lead to different metaphors and the understanding of life requires the understanding of metaphors. Accordingly, the metaphoric way of describing the happenings in our lives reflects the metaphoric way of our thinking. An account of metaphor as implicit and conceptual was proposed by Lakoff and his colleagues (Lakoff & Johnson, 1980; 1999; Lakoff & Turner, 1989). They identified many groups of metaphors, each arranged around a shared implicit metaphor; they traced the implicit underlying metaphor to a literal concept on the basis of embodied physical experience. Most conceptual reasoning is basically metaphorical because human abstract concepts are experienced and expressed in terms of embodied physical experience.

In Lakoff's (1993) *Contemporary Theory of Metaphor*, it is proposed that conceptual metaphors involve mapping one conceptual domain, the source domain, onto another conceptual domain, the target domain. Let us look at the famous example, "Argument is war", from Lakoff and Johnson's (1980) *Metaphors We Live by*. The source domain "war" is used to account for the target domain "argument". Table 1 below contains examples to show how people talk about argument in terms of war. People analogize argument as a battle only without the physical fights because the things we say in the process of arguing are like the different things people do in the war. In order to gain the ground or to win the argument, we adopt strategies to defend ourselves and attack the rival's positions (Lakoff & Johnson, 1980). Through this kind of correspondence, people understand the abstract target domain "argument" through more concrete source domain "war".

Table 1

From Conceptual Metaphor to Metaphorical Linguistic Expressions

The experience	War
The conceptual metaphor	Argument is war
Metaphorical expressions	Your claims are *indefensible*. He *attacked* every weak point in my argument. His criticisms were right on *target*. I *demolished* his argument. I have never *won* an argument with him. You disagree? Okay, *shoot!* If you use that *strategy*, he will *wipe you out*. He *shot down* all of my arguments.
Metaphorical correspondence	The structure of an argument corresponds to the structure of war.
Metaphorical entailment	The experience or the concept of war is used to structure the concept of war as an argument. The linguistic expressions about arguments correspond to the conceptual metaphor of war. Similarly, one's way of acting and interacting with others during an argument corresponds to the concept of war.

Note. Source: Su (2007, p. 8).

The "Argument is war" metaphor plays a central role in European cultures and it structures the actions that people perform in arguing. Su (2007) stated, "The essence of a metaphor is to understand and experience one kind of conceptual domain in terms of another and these concepts are metaphorically structured" (p. 7). The

forming of the "Argument is war" metaphor is by applying people's experiences of war to structure the activity of arguing since many of the things they say and do in the process of arguing are similar to those of war; thus, argument is structured by the concept of war. Argument is not war. It is not even a subspecies of war. The former one is verbal discourse and the latter one is armed conflict. They are two different things. Figure 1 adopted from Su (2007, p. 8) shows the process of conceptual mapping from the source domain to the target domain. Su (2007) also pointed out that "The concept of war is metaphorically structured, then the activity of arguing shares this metaphorical structure" (p. 8).

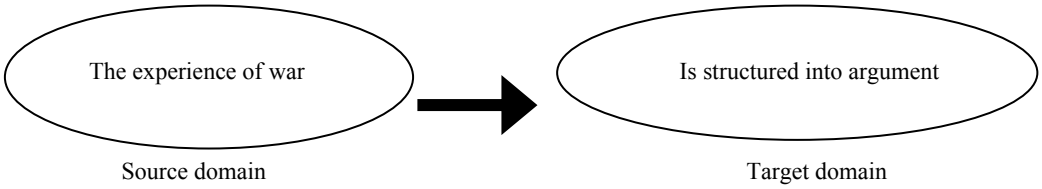

Figure 1. The process of conceptual mapping.

It is important to know that the mapping between domains could be abstract to concrete, concrete to concrete, and concrete to abstract. Moreover, metaphors can begin with either source domain or target domain. Let us look at the following examples provided by Glucksberg, McGlone, and Manfredi (1997): "His lawyers were sharks" is mapping between two concrete domains; "Love was the couple's voyage" is to understand the abstract "love" through a more concrete concept like "voyage".

As mentioned above, metaphor can not only serve as an important role in our daily discourse but it can also be found throughout our everyday language (Gibbs, 1994), even though the stereotypical view of metaphor is often a matter of words, a characteristic of language, rather than thought or action (Lakoff & Johnson, 1980). Metaphors are indeed used more frequently than we know of so that they are often overlooked. Lakoff (1993; 1994) proposed that one of the important properties of metaphors is that they are used mostly unconsciously, automatically, constantly, and unnoticeably, just like our linguistic system and the rest of our conceptual system. Metaphor is like a common linguistic occurrence. It has various textual appearances and different functions in various settings, and it is also crucial to different types of communication, from informal interaction to political speeches (Semino, 2008).

Johnson (1975) found that there were five metaphors in every 100 words of general talk. H. Pollio, Barlow, Fine, and M. Pollio (1977) also estimated that an average of four "figures of speech" per minute was found in teachers' talk over 12 hours which approximates to a strong linguistic metaphor. In another study of figurative speech in college lectures, Corts and Poillio (1999) found that, in every 4.8 sentences, one "figurative use" was found; the figurative speech includes metaphor, hyperbole, irony, and so forth. Cameron (2003) also suggested that four metaphors in 70 words per minute were found in teacher talk. Not only do metaphors appear pervasively in spoken language, it is also common in written texts. Arter (1976) found a 2.5% proportion of "figurative language" in recognized literature excluding poetry and Pickens, M. Pllio, and R. Pollio (1985, p. 483) found a proportion of 1% of "figurative language" in basic readers.

The Conceptual Mapping Model for metaphor processing proposed by Ahrens (2002) categorized metaphors into three types, which are "conventional metaphor", "novel metaphors that follow mapping principles", and "novel metaphors that do not follow mapping principles". Examples of each type adopted from Lu (2001) were provided in Table 2. By looking at how long it takes for people to react to the three types of

metaphors, Lu (2001) was able to discover the different comprehending speed of each type of the metaphor in Chinese. In her first of the two experiments, the whole sentence reading time experiment, the participants were asked to listen to the stimuli and the time spent on understanding these sentences was measured. The result suggested that conventional metaphors be processed the fastest since the conventional metaphors are already embedded in the lexicon or conceptual system. This type of metaphor is frequently heard and used in daily conversation. The second type of metaphor is processed the second fastest since it is less acceptable than the first type. Readers might have to take a little bit of time to think about it before understanding the intended meaning. The third type is processed the slowest since it is the least understandable. Even though the reader might understand every single word in the sentence, the meaning of the whole sentence might be anomalous. The results of her second experiment, the literal truthfulness judgment of metaphors, dealt with the issue of "literal falsity" in metaphor. The anomaly view towards the issue proposes that it is because the literal meaning is absurd to people, they are thus able to detect metaphors and understand them.

Table 2

The Three Types of Metaphors

Metaphors and mapping principle	Metaphor type	Experiment stimuli
Idea is an infant: Idea is understood as an infant because infants are physical beings that are born and ideas are abstract entities that are born.	Conventional metaphor	Tade lunwen dansheng le. His thesis is born.
	Novel metaphors that follow mapping principles	Tade lunwen manyue le. His thesis is a month old.
	Novel metaphors that do not follow mapping principles	Tade lunwen duannai le. His thesis is weaned.

Note. Source: Adopted from Lu (2001, p. 130).

Many studies (Clark & Lucy, 1975; Glucksberg, Gildea, & Bookin, 1982; Wolff & Gentner, 2000) have suggested that if a sentence can not be interpreted by its literal meaning, the metaphorical interpretation is then generated. The results of Lu's (2001) second experiment suggested that it takes the longest for people to figure out that the conventional metaphor is actually literally false statement. The reason for that is because the conventional metaphors are the most commonly used metaphors and people are so used to them. It is very easy to mistake "metaphorically true" to "literally false" statements. The third type of metaphors is, on the other hand, the easiest and the quickest to be judged as literally false statement since they are the most novel and their interpretability is the highest among the three (Lu, 2001). It is important to know that the distinctions of conventional and novel metaphors could seriously affect the results of the study since conventional and novel metaphors might be processed differently in the human brain (Gentner & Wolff, 1997). Gentner and Wolff (1997) have already proposed that it is very likely that people, when dealing with different types of metaphors, adopt different strategies to decipher the metaphors. They also indicated that novel metaphors may be understood by alignment. It is still an unclear issue that how metaphors are processed and comprehended. There are some studies that attempt to reveal the process of people making sense of metaphors. The four studies of Gibbs and Nascimento (1993) have investigated how people adopt their previous knowledge to make sense of a novel statement. The results showed that people utilized various metaphors to conceptualize "love" and they were also aware of the metaphors used in poems. Moreover, people understood certain common metaphorical expressions when they were reading love poems. The studies provided evidence to show how people understand the literary language, and also provided opportunities for us to see that people unconsciously adopt their preexisting knowledge or apply the same conceptual domain to make sense of a novel statement.

Metaphor in Song Lyrics

A song lyric is like a poetry that has limitation in length; yet, it contains more of the authentic language that people use every day. Metaphors reveal the way that lyricists think and act. A song lyric could also reflect the culture of a certain area of a certain group.

In the exploration of metaphors in Taiwanese love song lyrics from year 1990-2008, Chang (2008) found out how lyricists express their ideas and concepts by adopting metaphors in the lyrics. They showed aspect of culture that metaphors reflect in the lyrics and the interaction between audience and their own cognition and thoughts. Lyrics are often related to the five senses of human body: touch, see, smell, hear, and taste. Such a phenomenon is congruent with the Mind-as-Body Metaphor proposed by Sweetser (1990). Based on Conceptual Metaphor Theory proposed by Lakoff and Johnson (1980), the most commonly used conceptual metaphor in Taiwanese song lyrics is "Love is food". It is different from the results shown in other research, where "Love is a journey" is the majority of conceptual metaphors. This reflects Taiwanese culture in that people talk about the concept of love in terms of food.

Moreover, in the process of exploring the lyrics, Chang (2008) categorized the features of metaphors in lyrics into different kinds based on the theory proposed by Fauconnier and Turner (1996; 1998; 2002). First of all, different metaphors are found in one song and all those metaphors actually refer to only one similar concept. Second, one metaphor is found within one song but it is used to refer to various meanings, e.g., the sentence "Smoke gets in your eyes", appeared twice in the song "Smoke Gets in Your Eyes". At the first time, the lyricist is trying to say that when smoke gets in the eyes, it makes people's eyesight blurry because they are so madly in love that they are not aware of their lover's faults. The second time means that when the love between two people is gone, smoke gets in the eyes and people will cry. One is to express the extremely happy feeling of being in love and the other is to describe the heart-broken feeling. Third, the metaphors in the song lyrics are persuasive and encourage people to do something. Fourth, the interpretations of the metaphors in song lyrics are not fixed. It has room for decipherment of people with different backgrounds and experiences. In other words, the meaning of the metaphors could be diverse. If people have their own interpretation of the lyrics, it is more likely that they would like the songs better (Chang, 2008).

Phonosemantics

The sort of sound-symbolic patterning commonly discussed and illustrated is in terms of imitatives and synesthetic sound-symbolic forms. For instance, in imitatives, stops are used for abrupt sounds and acts, and continuants for continuing sounds and acts. Synesthetic sound symbolism is the process by which some vowels, consonants, and suprasegmentals represent visual, tactile, or proprioceptive features of objects, like size or shape. For example, sounds, such as palatal consonants and high vowels are commonly used for diminutive forms and words meaning small objects (Hinton et al., 1994).

People, especially children, learning a language, be it first or second, often use phonological resemblance as a strategy for interpreting unfamiliar words. The strategy becomes reinforced when some threshold of phonosemantic coherence is reached. This mechanism is proposed for the retention of phonosemantically related sets of lexical items over a long period of time (Lawler, 1990). Further, in the analysis of the lexicalization of a metaphor, one of the findings of Hines (1996) is the shared phonetic shape of the metaphorical expressions. Whether or not it is a peculiar coincidence or a linguistic conspiracy, Hines

suggested "eccentricity of the sign" against "the arbitrariness of the sign". Similarly, the attempt of the present article is to provide a phonetic consideration on the metaphors collected in previous studies related to song lyrics and to infer the existence of additional variables which might be relevant to metaphor description and hence provide consolidation for teacher education.

Methodology

The analysis used in this study follows an "ecological" approach in the sense of Rhodes and Lawler (1981)'s "reject(ing) presupposition of monocausal explanations" (p. 1) to examine the metaphorical expressions in the song lyrics. Metaphors subject to concrete and abstract subsets are described and discussed for the existence of additional variables, phonetics hereof.

The analysis framework is mainly based on that of Lakoff and his colleagues (Lakoff & Johnson, 1980; 1999; Lakoff & Turner, 1989), Luo (2005; 2010), and Hines (1996). The procedures start with identification of all the non-literal metaphorical meanings denoted by the words and expressions in the song lyrics. Then, the expressions are categorized as concrete and abstract as the classification shown in Luo's (2005) study and in the "Introduction" section above. The "core" elements of the metaphors will be identified and analyzed in terms of their phonetic features as denoted in Hines (1996) and phonological markedness in Carlson and Gerfen (2011). For example, in "Smoke Gets in Your Eyes", the expression "smoke gets in your eyes" is a concrete metaphor with the smoke mapping to the domain of unclearness/blindness and the core element is "smoke"; then, the beginning of "smoke" is a phonologically marked consonant cluster. After the phonetic descriptions of the metaphors, the interactions between phonetics and metaphors will be generalized and characterized tentatively according to the contrast of concreteness and abstractness. The analysis process is illustrated in Figure 2.

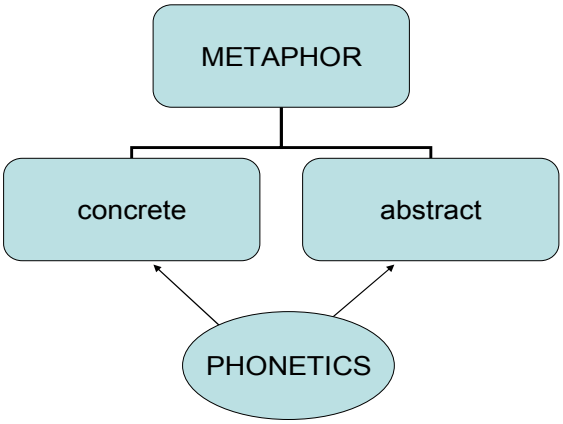

Figure 2. The analysis process of metaphor and phonetics.

Phonetic Description of Metaphors

Concrete Forms of Metaphor

"Always". How metaphors are used to assist the expression of one's idea is shown in the line "Your life is sun chasing all the rain away" in the song "Always"; "sun" is mapped to the girl's life, meaning her life is like the sun, bright and warm. "Sun" here is also personified as if it could move like human and repulse the rain away. "Rain" is used to illustrate a more negative side of life. The above citation means that "The girl's life is bright and warm and repels away the bad things in life". The core words here are "sun" /sʌn/ and "rain" /ren/;

both are frequent nouns and phonologically unmarked in the sense that both are of the phonetic structure of consonant-vowel-consonant (CVC).

"Smoke Gets in Your Eyes". In the lines "All who love are blind. When your heart's on fire, you must realize. Smoke gets in your eyes", "blind" literally meaning "cannot see" is mapped to people in love, who are usually not aware of their lover's faults. The phrase "on fire" is used to describe the feeling of being in love and the heart filled with such strong passion for someone as if it were on fire. The smoke caused by the fire makes everything blurry. The citation means that when people are in love, the feeling can be so strong that it can make people lose their mind and not aware of their lover's faults. The core elements are "blind" /blaɪnd/ and "fire" /faɪr/; the former starts with a consonant cluster, hence phonologically marked, and the latter with an unmarked structure of CVC.

An example of personification is in "When a lovely flame dies, smoke gets in your eyes"; "Flame" is personified otherwise it cannot literally die like a human being. "Lovely flame" refers to love and when the flame goes out, it creates smoke. Smoke getting in one's eyes will irritate them and make them form tears. The citation means when the love is gone, one will cry. The core words here are "flame" /flem/ and "smoke" /smok/, both begin with consonant clusters and are phonologically marked.

"She". She is an anonymous girl in the song that the man wants to be with. The lyricist adopted a lot of metaphors to illustrate the contradictory feelings of the man toward his dream girl. In the lyric, "Treasure or the price I have to pay" illustrates that being with her could be the most valuable thing for the man or it could be a lesson he would learn if she breaks his heart. The core elements "treasure" /trɛʒər/ and "price" /praɪs/ both begin with phonologically marked consonant clusters. In "Song that summer sings, and chill that autumn brings", the mapping is made between the feelings of being with her and the warmness and coldness of different seasons. The words "song" /sɔŋ/, "summer" /sʌmər/, "sings" /sɪŋz/, and "chill" /tʃɪl/, all begin with unmarked sibilants, and "autumn" /ɔtəm/ and "brings" /brɪŋz/ begin with marked sounds of /ɔ/ and a combination of consonant cluster respectively. "Beauty and beast" means that she could be a "wonderful girl" or a "terrible" girl, with the two words both begin with the unmarked bilabial /b/. "Famine or the feast" means that being with her could leave the man starving for something or it could make him feel completely satisfied, and the two words both begin with the unmarked fricative /f/. "She may be the mirror of my dreams" means the girl maybe everything (since mirrors reflect everything) the man dreams of, and the core word "mirror" /mɪrər/ begins with an unmarked bilabial nasal. "She may come to me from shadows in the past that I remember till the day I die"; here, "shadows" refer to memory and the citation means that she will always be in the man's memory and he will always think about her until the day he passes away. The mapping between shadows and memory relies on their feature of being unreachable. The core word "shadow" /ʃædow/ begins with an unmarked sibilant. In the end of the song, the line "Me, I will take the laughter and her tears" illustrates the determination of the man being willing to be with her. He will take the laughter, symbolizing the good times, and tears, the bad times. The core words "laughter" /læftər/ and "tears" /tɪrz/ start with unmarked sounds.

"Memory". In the sentence "It is so easy to leave me all alone with the memory of my days in the sun", "my days in the sun" refer to the good days. The singer has nothing left but the memory of her good days. The core element here is "sun" /sʌn/, phonologically unmarked with a beginning voiceless alveolar fricative and a structure of CVC. In "burnt out ends of smoky days, the stale, cold smell of morning", "burnt out" means "get rid of", "put an end to", or "finish"; "smoky days" means the bad times or the bad situations; and "stale" refers to "old" or "past"; the sentence means to put an end to the bad times in the past. Here, the core words are

"smoky" and "stale", both phonologically marked with initial consonant clusters. In the line "The moon lost her memory. She is smiling alone", the "moon" is personified as a woman; as the core word, "moon" /mun/ is phonologically unmarked structure of CVC. A similar mapping of personification is shown in "The wind begins to moan", where human being's moaning sound is used to depict the blowing sound of the wind and the wind is personified as if it could moan like a human being. The core words "wind" /wɪnd/ and "moan" /mon/ are phonologically unmarked with an initial labiovelar glide and an initial bilabial nasal respectively. In "I remember the time I knew what happiness was, let the memory live again", the core word "memory" is personified to be able to come and go, and it begins with an unmarked bilabial nasal. Then, "The street lamp dies" means the street lamp goes out when the sun rises; the "street lamp" is personified, and "street" /strit/ starts with a phonologically marked consonant cluster while "lamp" /læmp/ starts with an unmarked lateral.

"Yesterday Once More". "Happy times" are personified as human beings that have gone away and come back again in "Those were such happy times and not so long ago how I wondered where they'd gone. But they're back again just like[1] a long lost friend". The core words "happy" /hæpɪ/ and "times" /taɪmz/ both begin with unmarked sequences of a consonant followed by a vowel. A mapping between the old song and the good old days can be seen in the line "Those old melodies still sound so good to me as they melt the years away", meaning with the time/years going by, both the songs and people get old, and it is the songs that have brought people back to the good old days. The core words "melodies" and "melt" both begin with the unmarked bilabial nasal.

"Top of the World". When a person is in love, everything she/he sees is great, as in "You are the nearest thing to heaven that I've seen"; heaven symbolizes perfection. The beloved is perfect in the eyes of the lover. The core word "heaven" /hɛvən/ begins with an unmarked sequence of a consonant followed by a vowel. Similarly, "Your love put me at the top of the world" does not mean to stand on the top of the world but describe the feeling that the lover has everything if the beloved is by the side. The core word "top" /tap/ contains the unmarked phonological structure of CVC.

"Let It Be". To people who believe in the Catholicism, Mother Mary, the mother of God, is almighty. When people are in trouble or are lost in life, they need an almighty power to guide them from above. Here Mother Mary is mapped to the almighty power: "Mother Mary comes to me speaking words of wisdom"; that is, Mother Mary does not literally appear in front of people but is believed to help people in need. Both of the core words "Mother" and "Mary" start with unmarked sequences of a consonant followed by a vowel.

"Trouble Sleeping". A spatial expression "there" can extend metaphorically to mean "the situation in love" as in "cause I've been there before and it's not enough". That is, last time when the singer was in love, something must have happened, which made her realize that being in love is not enough, so now she is scared to be in love again because it takes more than being in love for two people to be together. The core word "there" begins with a phonologically marked voiced interdental fricative.

"Fernando". "Every hour every minute seemed to last eternally" is used to describe how scared the person is: He is so scared that an hour or even a minute seems so long for him. The core word "eternally" begins with a marked lax high front vowel /ɪ/. In "We were young and full of life", "full of life" means they still have a long life ahead of them. The core word "full" /fʊl/ contains an unmarked initial voiceless labiovelar fricative. The color of hair can be mapped to age as in "Now we are old and grey, Fernando". The core word

[1] Sentences containing "like" are simile. This sentence of the citation is a case of simile.

"grey" /gre/ starts with a marked consonant cluster. Further, guns and cannons cannot "roar" unless personified as in "The roar of guns and cannons almost made me cry". The fierce battle is what makes the guns and cannons shoot and produce sounds and thus make people cry out of fear. The core word "roar" /ror/ is composed of an unmarked sequence of CVC.

"Don't Know Much". "Life" is compared to a road which leads to an unknown destination as in "Look at this life, I still don't know where it's going", which means "I am lost in life". The core word "life" /laɪf/ contains an unmarked sequence of CVC. In "look at these dreams so beaten and battered", "beaten and battered" are used metaphorically to mean dreams become old, worn out, and hard to come by as days go by. Both of the core words "beaten" and "battered" start with an unmarked stressed syllable of consonant and vowel (CV).

Abstract Forms of Metaphor

This section describes the use of metaphor in abstract forms and their phonetic representations.

"Always". In the lyric "The love like yours is grand. It must have been sent from up above", the phrase "up above" literally means overhead, upon, or aloft. The figurative meaning of up above is "heaven". The sentence means that your love is so great/big that it must have been sent from God in the heaven. The main vowel in the core words "up above" is marked /ʌ/ and their syllable structure is not canonical CV or CVC.

"She". In the line "She may be the trace of pleasure or regret", we can see "pleasure" refers to happiness and "regret" refers to sadness. Happiness and sadness are two extreme feelings. The citation means if the man is with her, he might be happy or he might be sad as well. The core words "pleasure" /plɛʒər/ and "regret" /rɪgrɛt/ are both phonologically marked in that their stressed syllable both begin with consonant clusters.

"Don't Know Much". In "look at this soul still searching for salvation", the noun "soul" refers to a person and the person is still looking for help. The core words "soul" /sol/ and "salvation" /sælveʃən/ both begin with the unmarked syllable structure of CVC.

General Discussion

The analyses in the previous section have detected 47 instances of concrete metaphors and six cases of abstract metaphors in the 10 song lyrics. This asymmetrical result is congruent with those of Luo (2005; 2010). As proposed by Lakoff and his colleagues (Lakoff & Johnson, 1980, 1999; Lakoff & Turner, 1989), the implicit underlying metaphor was traced back to a literal concept on the basis of embodied physical experience. Most conceptual reasoning is basically metaphorical because human abstract concepts are experienced and expressed in terms of embodied physical experience. Hence, abstract metaphors are more advanced and difficult in terms of conceptual reasoning and thus fewer in number compared to concrete metaphors.

Among the 47 cases of concrete metaphors, only 13 of them are phonologically marked; the ratio is no more than one third. On the other hand, there are four out of six abstract metaphors that are phonologically marked; the ratio is two thirds. This finding coincides with those of Lu (2001) and Carlson and Gerfen (2011). By measuring the reaction time of the subjects on different types of metaphors, Lu (2001) found that conventional metaphors were processed the fastest since the conventional metaphors are frequently heard and used in daily conversation. The second type of metaphor was processed the second fastest since it is less acceptable than the first type. The third type was processed the slowest since it is the most difficult and the most novel. In this sense, the abstract metaphors in the current study correspond to Lu's (2001) second or the third type of the metaphors in that the abstract metaphors are less frequently used and more novel compared to

the concrete ones. In addition, Carlson and Gerfen (2011) conducted corpus search and a lexical decision experiment on Spanish diphthongs and it was found that unmarked phonology is favored in words likely to be processed holistically and marked phonology is favored in those likely to be processed during processing (p. 533). They also claimed that novel structures should be parsed and favor marked phonology. If abstract metaphors here are considered novel, they should favor marked phonology as well, and so do they, as shown in the ratio of two thirds of phonological markedness.

Conclusions

The present article has provided a phonetic consideration on the metaphors collected in previous studies related to song lyrics and to infer the existence of additional variables. After the phonetic descriptions of the metaphors, the interactions between phonetics and metaphors have been generalized and characterized tentatively according to the contrast of concreteness and abstractness, which might be relevant to metaphor description, and hence provide consolidation for teacher education.

Gentner and Wolff (1997) has already proposed that it is very likely that people, when dealing with different types of metaphors, adopt different strategies to decipher the metaphors. They also indicated that novel metaphors may be understood by alignment. The present study did not carry out empirical experiments to explore the processing of the metaphors. Future research may examine the unclear issue on how metaphors are processed and comprehended.

Although Hines (1996) presented the sound symbolism between voiceless stops /p/, /t/, and /k/ and the central dessert words for women, relevant descriptions in metaphor were not provided. The data in this study could not demonstrate specific or straightforward sound symbolism as shown by Hines (1996) in that the metaphors in this study represent various semantic topics and mappings. Nevertheless, it is significant that the present paper reveals a tendency of the phonological markedness toward the concreteness and abstractness of metaphor. The analyses provided are also expected to offer consolidation for English teachers' linguistic foundation.

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The Changing Tide: The Effects of the Common Core State Standards on Early Childhood Curriculum

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The implementation of the Common Core State Standards (CCSS) across the nation raises important and challenging questions for early childhood educators. The developers of the CCSS purport that these standards will promote higher-order thinking skill development among our K-12 students. However, what is expressly missing from the CCSS is an attention to the whole child and how pre-school and pre-kindergarten educators will prepare their students to enter the increasingly demanding learning environment. This article discusses the challenges and benefits of the CCSS and offers considerations to early childhood educators, administrators, parents, and other influential stakeholders for future implementation.

Keywords: Common Core State Standards (CCSS), early childhood curriculum, curriculum development

Intoduction

The development and implementation of the Common Core State Standards (CCSS) throughout the nation has groups of administrators, teachers, and families asking important questions. One group particularly concerned about the implications of the movement toward CCSS is the early childhood education community. As K-12 programs move toward its implementation, how such implementation will impact the pre-school learning environment, as well as the primary grades, deserves careful and imperative attention.

Representing a multitude of advocates of young children, a joint position statement endorsed by the National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS-SDE) was published. These highly esteemed organizations offered a lot to consider, beginning with the idea that early childhood, the period from birth through age eight, is a unique period of life with important foundational experiences crucial to success in later years. In their statement, they noted, "Throughout the CCSS development process, we have jointly expressed concern to the developers that effort on only two content domains could result in the unintended consequence of narrowing curriculum and instructional practice to the detriment of student learning" (NAEYC/NAECS-SDE, 2010, p. 2). This statement is paramount to the impact that CCSS may have on how early childhood educators develop and implement appropriate curricula in their classrooms.

The CCSS were developed in collaboration with educators, specialists, and experts (Common Core State Standards Initiative (CCSSI), 2012). The developers of the standards asserted that they worked with these experts and specialists to identify the most effective strategies, models, and student learning expectations from

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across the country. They provided educators and others with a set of standards that all students, despite their home states, could master (CCSSI, 2012). According to the developers, these standards inform rigorous content delivery, build upon students' strengths, and support the application of higher-order thinking skills to prepare students for success in a global society (CCSSI, 2012). The overarching goal of the CCSS is to prepare students to enter colleges and ultimately provide them with the skills to succeed in their careers.

Educators generally support rigorous curriculum and provide opportunities for students to master content, reach proficiency targets, and conduct deep thinking. However, they often find that it is necessary to question the purposes and rationales behind educational policies and practices that seem to compromise appropriate practices and research-based child development principles. Therefore, as states move forward in implementing the CCSS across school districts, it is important to ensure that the whole child perspective is not lost in the shuffle. It is important that teachers are trained sufficiently to implement these standards appropriately. It is also important to carefully consider best practices and the developmental appropriateness of the curricula that we implement to children in early childhood settings. While several of the ideas presented in this article can be generalized across K-12 classrooms, there is a specific focus on how the CCSS affect the early childhood curricula for pre-school and kindergarten children's readiness for future learning.

Research Objectives

Pre-school is the time when children are learning exponentially. They are exposed to various activities, experiences, and interventions designed to activate prior knowledge and build strength in skills they will need for future learning. In "Are We Paving Paradise", Graue (2011) addressed the dramatic kindergarten curriculum shift experienced over the past decade. She noted that more recent kindergarten curricula developed by content specialists who have limited experience with young children have forced many educators into high-pressure teaching situations. Imagining going to a carwash and turning the wand on the high-pressure water setting, usually, it takes a few seconds before one gains control of the wand, and once you are finished washing your car, you might find that your car still has a few dirty spots. On the other hand, when you use the low-pressure setting, it might take longer, but there is a noticeable consistency to your handling of the wand and you might also notice that your car is generally cleaner. This is much like the environment in which many teachers find themselves. They are forced to fast track the content and use a high-pressure water setting, to ensure that they have covered many topics. This leads to superficial teaching that lacks real depth and authenticity. Often, teachers sacrifice a deepening of students' knowledge, skills, and dispositions needed for maximum learning in an attempt to get through the content.

When placed in these high stress positions, teachers sometimes retreat from best practices and appropriate curricula and move toward pacing guides that may not allow for modifications and accommodations of diverse learners (Lemke, Hoerandner, & McMahon, 2006). These inappropriate practices may further lead to inappropriate progress monitoring and high-stakes testing—all of which can be disadvantageous to the growth and development of young children. Learning in these high-pressure environments becomes disenfranchising instead of meaningful and worthy of children's attention. The purpose of early childhood education is to lead children "toward" learning and not "away" from learning. Learning is based on child development principles and practices, which allow teachers to develop experiences and opportunities to foster individualized success and achievement. Therefore, as the state of education in America changes, advocacy efforts to ensure best practices are retained in early childhood classrooms and that curricula that are delivered appropriately must increase as well.

Challenges of CCSS and Early Childhood Curricula

Living in an age of accountability, educators understand that standards matter. Moreover, standards are not new to early childhood educators. All states have standards and student learning expectations in most, if not all, content areas for young children. This would include guidelines for infants and toddlers for many states (NAEYC, 2010). Many states are rewriting or otherwise aligning pre-school standards in connection with K-12 CCSS (Zubrzycki, 2011). Most experts agree that the standards are an important component in supporting high-quality programs and are integral to assessments. Research suggests that teachers should pay attention to the standards when developing curricula and providing instruction to children (Collaborative for Academic, Soial and Emotional Learning (CASEL), 2013).

The CCSS have been adopted by over 40 states for K-12 classrooms. Therefore, one can certainly foreshadow the implications that these standards will have on the learning expectations for young children. These standards also raise questions regarding implications surrounding the development and implementation of appropriate pre-school curricula to prepare students to meet the demands of a CCSS-driven kindergarten classroom.

Currently, however, there are several states questioning the decision to adopt these standards. Some states have asked their legislatures and educational officials to reconsider the adoption of the standards. An article written by Elliott (2013) revealed that nine states, including Alabama, Indiana, and Georgia are rethinking the decision to adopt the standards. Texas, Alaska, Nebraska, and Virginia did not adopt the standards. Minnesota adopted only the reading standards. Although some states are reconsidering their adoption of the standards, for those states proceeding with implementation of the CCSS, there are several major challenges that address how the CCSS impact early childhood curriculua, and more importantly, how the standards move beyond the academic content to address and reflect the needs of the whole child.

First, and most obviously, the CCSS do not include any consideration for the pre-kindergarten students. It is interesting to note that pre-school experiences comprise more than half of the early childhood age range, but they were left out of the standards entirely (Meisels, 2011). Based on that finding, then, how are educators to ensure they are engaging in developing quality curricula that also prepare students for a more rigorous kindergarten learning environment? Indicators of a quality curriculum include: active engagement of the learner, relevancy of the curriculum to the learner, a curriculum based on foundational principles, child development knowledge, intentional teaching practices and experiences for young learners, consistency with content standards, activities and experiences which build upon children's prior knowledge, and sensitivity to culture, background, and acquired skills (Long, Hutchinson, & Niederhiser, 2011; Munson, 2011; Drake, 2012; NAEYC, 2003). The fact that the CCSS were developed without considering how teachers prepare pre-school children to face a rigorous kindergarten environment is troubling. Clearly, this has the potential to widen a gap between pre-school and school readiness efforts. It might also impact disadvantaged students from low-income families, whose learning achievements have historically been behind their more affluent peers.

Early childhood educators have advocated to safeguard the importance of play and experiential learning for years, and have noted that standards movements have put such a focus on the mechanics of content learning, in which play has been neglected or omitted (Long et al., 2011). Graue (2011) noted that in today's standards-based kindergarten, what counts as play is not really play, but instead involves "highly controlled centers focused on particular content" (p. 15). These centers "are really directed at capturing a specific

content-based learning experience, such as number bingo or retelling a story exactly as the teacher told it" (Graue, 2011, p. 15). Shannon Ayers of Rutgers University in New Jersey noted that:

> Having some alignment between pre-kindergarten and kindergarten in the future is important for teachers, kids, and parents. It transforms pre-kindergarten and said, "This is real school!". Because what we are doing in pre-kindergarten is leading and connected to what they will do in K-1, K-2, and beyond. (Zubrzycki, 2011, p. 20)

In a poll conducted by the Leadership and Learning Center, an organization providing assistance for the CCSS implementation to districts and school leaders, 96% of the respondents reported that they felt unprepared to implement the standards in their districts (District Administration, 2011). With pre-school on the fringe of communication, it is likely that pre-school educators and administrators would have even less confidence about how to approach the standards. Amidst the many concerns described above, combined with the fact that pre-school age children were not included in the development of the standards, it is understandable that many advocates are troubled about the implications of the standards on early childhood education and consider this a pivotal time for the field.

Second, many educators are equally troubled by the pushdown of curricula into younger grades and the potential for inappropriate practices within those classrooms—a phenomenon that has persisted for the past several decades. As states begin to align their curricula to these new standards, there is a clear pushdown of learning expectations into younger grades. In a recent article published in the *Washington Post*, Strauss (2013) questioned the President's call for a more rigorous curriculum for young children. It has also been reported, at least anecdotally, that in some states, there are instances where kindergarten children are now responsible for demonstrating proficiency in the standards that were previously taught in higher grade levels. For example, education officials in Arkansas compared and analyzed the CCSS with the state's standards. As a result, officials found that some state standards, once taught in second grade were being pushed down to kindergarten (Arkansas Department of Education, 2011).

Meisels (2011), the president of Erikson Institute of Chicago, explained that work on CCSS began from the "top down" in that they were first written with the end in mind (college and career readiness) and ended with kindergarten. While this may seem logical, it arguably allows less and less flexibility regarding standards in the lower grades. Strauss (2011) noted that "by the time the authors came to K-3, there was little room for flexibility. Some things that belong were omitted and some that do not were included" (p. 1).

How differently should pre-kindergarten teachers think about their curricula to prepare children for higher-level learning and skill development? Even more challenging is to imagine what happens to children who are not developmentally ready for that level of rigor and responsiveness. Without some consideration for developmentally appropriate practices and principles, there could be a detrimental impact on the progress and process of children's learning. It is imperative that pedagogical perspectives and best practices for three, four, and five years old children are supported through the implementation of the CCSS to ensure that children's learning is not compromised or stunted in an effort to increase the competitiveness and college and career readiness of the nation's students.

Third, the potential for narrowing the curriculum to focus initially on two content areas challenges one's thinking about the appropriate implementation and curricular focus. Educators must resist the temptation to solely focus on language arts and math, paying little attention to other content areas or developmental domains. This is a major challenge that reaches far beyond the pre-school curricula. In fact, many educators,

administrators, and other stakeholders question the rush to launch the standards without fully developing standards for all content areas with little consideration to all developmental areas and disciplines (i.e., science, social studies, social and emotional development, arts, music, etc.). Although the Next Generation Science Standards are available for schools to implement, the lack of a comprehensive set of academic standards is a challenge for educators when they build curricula.

Particularly troubling is the omission of social and emotional development, noting that social and emotional learning, executive function, and self-regulation are all clearly linked with success across the curriculum (Graue, 2011; Frede, 2010; NAEYC/NAECS, 2010; Meisels, 2011; Zins, Bloodworth, Weissberg, & Wahlbery, 2004). Interestingly, when Kentucky piloted the development of standards-based report cards, it included not only the two content areas, language arts and math, but also the process goals which included cooperation and respect (Guskey, Swan, & Jung, 2011). The addition of these goals seems to indicate that though the standards-based movement focuses primarily on reading and math; practitioners understand that without social and emotional skills, students are inhibited in their abilities to learn. Without standards in the social and emotional arena driving instruction in these areas, though, it seems unfair to assess that which has not been taught and practiced as part of the curriculum. Frede (2010) made a strong point when she suggested that "by only covering math and language arts as these initial standards do send messages that other areas, including social and emotional learning, are not important for later success or not the responsibility of public education" (p. 1).

To be fair, developers noted that efforts are underway to develop standards for other academic content areas (CCSSI, 2012). Some critics felt that there are still many important areas left untapped, such as arts, music, physical development, and many aspects of social and emotional learning. Without question, children develop more than just their cognitive abilities. The CCSS focus solely on the academic content and do not address the whole child. What is glaringly left out of the standards is attentive need for students to develop the whole self. Where is the attention to social and emotional competencies, physical development, artistry, and imagination? Certainly, educators can integrate these areas into their daily curriculum plans, but this is a standards-driven educational movement. The omission of specific standards and the lack of attention given to these issues are concerning.

Fourth, the lack of attention and discourse given to children with disabilities is potentially problematic. These standards define the skills and abilities that support students' readiness for colleges and careers. What is not addressed sufficiently is how these standards respond to students with disabilities. To what degree will students with disabilities be expected to master the content? How will these students' learning be assessed? How will their learning be reported? What considerations, if any, were given to supporting their needs? A recent article addressed this issue by drawing attention to, for example, students with impaired executive function. The authors suggested that if these children have troubles staying on task, as well as with organization and initiating work, it is going to be difficult for them to complete these standards with a high degree of proficiency (Constable, Grossi Moniz, & Ryan, 2013). These standards, created to build skills and knowledge to deepen cognitive complexity, might also have an opposite effect on children with disabilities, especially those with cognitive challenges (Conley, 2011). This deep, rich learning, while critical, may present a tremendous challenge to the struggling learners, pushing them further and further behind.

Fifth, many critics feel that implementing the standards prior to having clear assessments aligned to the standards is premature. While the standards are already being implemented in early grades across the nation, a

consortium is still working to develop assessments aligned to the new standards (Long, 2011). The Partnership for Assessment of Readiness for College and Career (PARCC) has developed assessment for the K-12 setting to evaluate each student's progress toward college and career readiness (PARCC, 2013). The assessments are scheduled to launch during the 2014-2015 school year. We agree with Meisels (2011) that having standards without assessments is "like having a list of destinations but without a map" or "having no idea of how to get there or any way of knowing if we have arrived" (p. 2). Staying true to early childhood principles, we further assert that assessment for young learners be conducted in a manner congruent with best practice: authentic, process-oriented, conducted within the natural environments of children, multidimensional, and involving the participation of families in the assessment (Graue, 2011; Grisham-Brown, Hallam, & Brookshire, 2006; Bredekamp & Copple, 1997).

Clearly, challenges presented by K-12 CCSS implementation are troubling. Still, there are positive changes for future learners as well. Such benefits are discussed in the following section.

The Benefits of CCSS for Young Learners

The developers suggest several guiding principles that were used to develop the standards. These principles offer a glimpse into some careful considerations to ensure that students could reach proficiency while also supporting teachers' instructional effectiveness. According to the developers, these standards support students' readiness for colleges and careers, include the best work states had to offer, are evidence-based, provide a clear and consistent continuum toward learning, consider teachers' expertise, and most importantly, allow for flexibility within the curriculum (CCSSI, 2012).

Flexibility Within the Curriculum

While there may be many benefits of the CCSS, one of the principles—flexibility, may serve as a game changer for many K-12 teachers. Teachers have been freed from rushing through curricula in an effort to meet deadlines, teach to test, or provide superficial content. Instead, teachers gain the opportunity to deepen knowledge and create curricula that allow for more higher-order thinking and demonstrations of that thinking and learning. It has been suggested that since the No Child Left Behind Act was implemented, K-12 education slowly moved away from creating a depth of knowledge, and replaced it with fast-paced and highly ineffective teaching that unfortunately continued to widen the achievement gap among the nation's children, especially economically disadvantaged children and those with disabilities (Lemke et al., 2006). Allowing teachers to assert more control over their curricula creates more opportunities for teachers to be creative, interactive, hands-on, and experiential. In addition to the content in math and English/language arts, the standards offer attention to "cognitive strategies" involved in meeting the standards that involve higher-order thinking and problem solving. This is a step in the right direction from the more recent focus on drilling of isolated skills to a more challenging and engaging curriculum (Conley, 2011). The larger question is how will schools, districts, and adminstrators shift the instructional power to teachers—freeing them to design and implement curriculum that is unique to their students.

Mobility Is not a Factor

Another benefit is somewhat reflected in the title—Common. These standards are common to all participating states. Therefore, if a family moves to one of the other participating states, the child should remain on target with his or her grade. It is widely understood that there can be a gap in learning when a family moves

to another state. Therefore, the CCSS lessen the chance that mobility will become a factor in students' learning progress. If a family moves, the learning expectations remain the same. The child's learning is on target and the transition is seemingly more streamlined. Those states that adopted these standards foster children's mastery of the content in spite of families' moving.

Facilitating Closure and Competitiveness

The achievement gap between children with great access to resources and those who have little access to resources is a longstanding issue that impacts children's learning (Judge, 2013; Cooper & Schleser, 2006; Fielding, 2006). As it relates to young children, there are several studies that report a significant achievement gap among economically disadvantaged pre-school children entering kindergarten and those from more affluent families and communities. However, when teachers have appropriate curricula and standards and support from administrators and other stakeholders, they can retreat from the fast-paced and high-stakes learning environments. They can re-focus on the best practices that will deepen knowledge to facilitate leveling the playing field for all learners. For example, teachers can design instructional units to deepen students' knowledge, skills, and dispositions. By deepening students' knowledge, not only will teachers align their curricula to many of the guiding principles of the CCSS, but they will also work to close the achievement gap.

The administrations of the last three presidents have addressed the fact that American children are falling behind children from other industrialized countries. It has been suggested that a part of the issue with competitiveness is related to the rush to simply get through the curriculum, without paying enough attention to how children comprehend, apply, and reflect on their learning. Through the CCSS, students will focus on more academic vocabulary, conduct short focused research, use more informational text, debate, marshal arguments, focus on depth and mastery of number and operation in elementary grades, and evaluate and reflect upon their own progress (CCSSI, 2012). All of these skills are designed to ensure that children are ready for the university classrooms and/or careers.

Mastering of these overarching goals can potentially strengthen students' standardized test scores and advance students' proficiency of content. We agree that mastery of the goals will move us closer toward closing the achievement gap in our country and regaining a competitive edge among other countries, but also strongly advocate for the standards to include all content areas, especially social and emotional development for young children. It can be noted that in a study described by Munson (2011), nine nations to which the United States is consistently compared and who outrank the United States do just that—they offer a liberal arts education including literature, history, geography, civics, science, and foreign language, in addition to reading and math.

Then, what does all of this mean for three, four, and five years old children in pre-school classrooms? The following suggestions and recommendations provide an opportunity for educators to engage in further discourse and reflection, and possible action.

Considerations for Educators

Certainly, the launch and implementation of the CCSS raise some significant challenges and concerns for the development and implementation of early childhood curricular development, as well as some benefits for our young learners. While this list is not exhaustive, it does represent suggestions for early childhood educators and other stakeholders to consider as they continue to transition to full implementation of the CCSS:

1. Evaluating current programs, interventions, innovations, and practices to determine if they are appropriate and effective for the intended learners;

2. Recognizing that education is ever-evolving, but continued monitoring is necessary to ensure continued growth;

3. Engaging in consistent in-service professional development of staff around the CCSS;

4. Organizing information to help families understand the impact of the CCSS on education and the individual effects these standards may have on their children's learning;

5. Conducting self-inquiry into the development of the CCSS to better understand the purpose and shift;

6. Aligning of the standards to curricula and authentic assessment measures is essential;

7. Evaluating teachers' effectiveness and students' achievement through authentic assessment and criterion-referenced measures to support accountability. These assessments should be administered in a natural setting;

8. Increasing the attention given to the dispositions for learning. This includes direct instruction of social and emotional skills and critical analysis of teachers' effectiveness in this area;

9. Organizing national work groups to create developmentally appropriate learning expectations for our youngest learners that align to the CCSS;

10. Remembering that teachers and families know their students/children best. Let the standards guide you, but put individual needs of children first and foremost. In short, individualize and accommodate for students within the standards, rather than trying to change students to fit the standards.

Conclusions

While there are some significant challenges to the CCSS, there are also some benefits. The most obvious benefit is the development of standards that both encourage and mandate educators to think about the accountability and efficacy for the children in their care. But this benefit can become thwarted if its focus becomes too narrow with little attention given to empirically supported developmental principles of early childhood. In developing strong early childhood experiences, it is important that educators, administrators, and all other concerned stakeholders consider how young children develop and learn, and build curricula accordingly. As states continue to design curricula, strategies, and assessments aligned to the CCSS, it is important that advocates for children make a concerted, focused effort to uphold best practices that are foundational to positive support for young children as they grow and develop. This means that attention should be paid to the needs, strengths, and backgrounds of the whole child with consideration given to the child's growth and development across domains of language, physical, social, emotional, and cognitive development. They must strengthen and increase their commitments to advocate for these best practices in early childhood classrooms, regardless of the current educational climate and movements. Standards matter, yes, but so does representing the best in teaching and learning, especially for our youngest and often times most vulnerable learners. Representing what is best in early education should remain a constant focus for all educators to remain true to early childhood principles that support early learning at its best.

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Enhancing Learning of Mathematics in Marine Engineering Across Diverse Students: Impact of Real-Time Formative Feedback

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This paper proposes that learning of theoretical engineering units with mathematical content can be enhanced through providing real-time formative feedback. A self-directed learning approach is proposed through provision of real-time feedback used within formative assessments. This is supplemented by integrating theoretical units with operational units having practical applications. Performance levels of all the students who utilised the real-time feedback in formative assessments improved. Dynamic feedback in formative assessments improved student learning as it encouraged self-directed studies and enhanced motivation for learning among the majority of the students. The students agreed that integrating theoretical units with operational units enhanced their learning and enabled them to see the relevance to their work roles. Properly designed tools, integrating theoretical and practical contents, and providing adequate and appropriate dynamic feedback will motivate self-directed learning.

Keywords: mathematics, marine engineering, formative assessment, real-time feedback

Introduction

Engineering studies inherently consist of considerable mathematics content. This together with the inherent complexity in engineering subjects compounded by inadequate fundamental mathematical skills in some students have traditionally posed frustration in students learning tertiary engineering (Willcox & Bounova, 2004). The minimal mathematics strategy (Otung, 2001) encouraging students to study engineering by employing mathematics to the level that is absolutely essential; and the just-in-time mathematics strategy (Klingbeil, Mercer, Rattan, Raymer, & Reynolds, 2005) adopting an application-driven approach, shifts the traditional emphasis on mathematics pre-requisites and puts engineering first and mathematics second while motivating the students in learning.

Unlike traditional tertiary engineering programmes, the entry standards to courses for students aspiring to be marine engineers on merchant ships vary significantly across the world, although minimum competence in

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mathematics is expected. The model marine engineering courses (Model Course 7.04) developed by International Maritime Organisation (IMO) (1999) states:

> Administrations will wish to specify their own educational standards for entry. With this in mind, attention is drawn to the fact that while the mathematical standards of the courses to be followed are not high, trainees continually use fundamental mathematics as a tool throughout the whole of their training…. (p. 3)

This issue is further compounded, as different countries have different qualification standards for marine engineers, ranging from certificate to postgraduate programmes. At the Australian Maritime College (AMC), the programme is at a Bachelor's level, requiring sufficient mathematical rigor to meet the technical competencies required by IMO and the Australian Qualification Framework (AQF) (2013). The course straddles both the vocational and higher education sectors, utilising a sandwich course structure combining a series of institution and workplace-based components, with the former consisting of a significant mix of theoretical and practical elements. Traditionally, in marine engineering programmes, the institution-based academic components have largely been content-driven, with the theoretical units consisting of significant mathematical content.

At AMC, application-driven mathematics strategies similar to the just-in-time and minimal mathematics have been in place within the marine engineering courses. Additional support in the form of a mathematics orientation week at the commencement of the second year and an additional two weeks mathematics refresher course prior to the commencement of the theoretical units in the third year, peer-assisted study sessions and mathematics foundation courses are offered as optional but highly recommended strategies, especially to those with lower mathematical knowledge.

Students in marine engineering courses at the AMC can broadly be spilt into two distinctive cohorts based on their entry qualifications: conventional school-leavers following a "cadet" programme and mature-age trade qualified students following a "trade pathway". The two cohorts vary considerably in their theoretical and practical skills, with the practicing trade technicians often entering the courses after a significant gap since completing their mathematics studies at school, and as a result, struggle to cope with the mathematical content. Often, they do not seem to appreciate the relevance and the application of mathematics at the workplace. As a result of the observed resistance to learn theoretical units with mathematical content, the delivery of these units poses considerable challenges. In most cases, these units are delivered and assessed separately from the practical units within the programme, with little integration and interaction between the two. Traditionally, the delivery of theoretical units is largely done in a conventional teacher-led approach within a classroom environment. The issue is further exacerbated by the need to deliver content and assess competence of the different student cohorts in common classes with large reliance on a single summative assessment. Minimal formative feedback and little feed-forward towards the summative assessments in mathematics-linked units are seen to reduce the opportunities for self-directed student-centred learning.

The research question formulated for this study was: How to enhance learning of mathematics-oriented engineering units across diverse student cohorts? Drawing from the theories of formative assessment, it was proposed that formative feedback will improve learning of mathematics-oriented engineering units. A hypothesis was generated from this proposition in the context of the marine engineering course at the AMC: Learning of mathematics-oriented marine engineering units will be improved by providing real-time formative feedback across diverse students. In addition, it was proposed that integrating the theoretical and operational learning content with relevance to students' prospective work roles will enable the students to overcome their fear of

mathematics and enhance student motivation.

While a number of earlier work and reviews (Brown, 2004; Gibbs & Simpson, 2004; Shute, 2008) has confirmed the significance of formative assessments and feedback, there is little evidence of real-time feedback in the learning of mathematic-dominated units in particular with diverse student cohorts. A Web-based assessment tool incorporating dynamic feedback was developed and formed the basis for a formative assessment in a second year theoretical engineering unit. It was trialled on 24 marine engineering students with different mathematical backgrounds, with the results showing the change in their learning. The effects of the process were further evaluated through a survey of the participants.

Real-Time Formative Feedback in Assessments

The role and practice of assessments are significantly changing in a student-centred learning environment. Formative assessments motivate and engage students in achieving their expectations and particularly in improving their performance (Black, Harrison, Lee, Marshall, & William, 2003; Boston, 2002). They make teaching more inclusive and learning more accessible to diverse learners by recognising, accommodating, and meeting the learning needs of all students (Jenkins, 2004). Self-evaluation is enhanced when students are given the opportunity to reflect on their work (Fontana & Fernandes, 1994) and further helps developing lifelong learning skills (Nicol & Macfarlane-Dick, 2006).

In order to allow students to benefit in the preparation of future summative assessments, formative assessments need to be supported by providing timely feedback (Brown, 2004). Integrating feedback in real-time within the assessment task leads to this feed-forward process (University of Tasmania, 2011).

This paper discusses an approach utilised at AMC to motivate students and provide means to enhance their mathematical problem-solving skills required for a second year theoretical unit—Marine Thermodynamics. This unit was integrated with the relevant sections of the second year practical focused unit—Marine Engineering Knowledge, thus bringing together the theory with relevant applications on ships. Advanced levels of these two units are learnt in the third year of the programme. Evidence suggests that learners emerging from the vocational background, such as practicing trade technicians, learn and perform better when they are trained through practice and are able to see the capacity to apply knowledge and skills being learnt in the context of their work (Oates, 1989). As such linking learning to their work roles is a key motivator (Oates, 1989) and as contextual understanding increases, student competence increases (Stanton & Burke, 1989).

In order to allow students to learn and apply concepts in problem-solving and carry out a self-assessment of their problem-solving skills, they need to be actively engaged to “do” and this active behaviour of the students needs to be assessed (Biggs & Tang, 2007). In traditional marine engineering programmes, there has seldom been an approach used to provide instantaneous feedback on formative assessments. Modern e-learning strategies are beginning to make an impact within the previously conservative maritime education and training sector, as it is recognised that they provide an effective way to increase student skills and competences (Jurian, Chiotoroiu, & Buibas, 2006).

Methodology

A Web-based self-assessment tool was developed to provide instantaneous feedback on assessment tasks used for formative purposes, primarily targeting students with relatively weaker mathematical skills. The reliability of the assessment tool was ascertained by testing the tool with a marine engineering cohort at AMC

consisting of 24 students of mixed ages and experience. This tool was used to guide the students through a series of problem-solving exercises incorporating formative feedback on the end results of problems (product feedback). The exercises were designed to link with practical marine engineering problems (the link between the theoretical and practical units).

The students are provided with a set of questions online, with the answers pre-defined in the system with a prescribed error margin of 1%. The students work through the problems using their workbooks, with the solutions entered into the online answer slots. The system then provided instantaneous feedback to the students on their answers, enabling them to re-visit the question iteratively and remedy any errors. The answer booklets are further used to provide detailed feedback. This enables them to learn and apply concepts in problem-solving, carry out a self-assessment of their problem-solving skills, and reflect accordingly (Nicol & Macfarlane-Dick, 2006). A comparison of pre-test and post-test results before and after provision of real-time formative feedback (an iterative process) was conducted to test the hypothesis. The performance summary of the students who utilised the tool was utilised for analysis of the results, with the rest of the students not considered for analysis in this study.

It is generally accepted that the "process" of problem-solving is of more interest in the learning process rather than the "output" or otherwise known as the "product" of problem-solving. The authors are of the view that in the context of engineering, the "product" is equally important to the "process" of problem-solving, and it can inform the "process" if an error has occurred through appropriate feedback. It can be inferred from the "product errors" whether there exists a "process error". While an error-free "output" or "product" would normally mean the "process" is correct, a "product error" will inform an error in the "process" and self-direct the learner to review the "process" and correct own errors.

The significance of "product error" can be explained with an example relevant to the work role of marine engineers. One typical activity on board a ship during a refuelling or "bunkering" operation is to check the "remaining on board" quantity of fuel in metric tons. This activity involves measuring or "sounding" the fuel tanks, recording the fuel temperatures, calculating the fuel volume using certified sounding tables with appropriate corrections for the list and trim of the vessel, and converting fuel volumes to metric tons using the density and temperatures, and finally arriving at the calculated quantity. The errors that may result during these calculations can lead to consequences in terms of sufficient fuel for the voyage, marine pollution through spillage, and cost repercussions to the operator.

Results and Student Feedback

The pre-test and post-test results before and after the provision of real-time formative feedback were compared using a paired *t*-test and the results indicated a highly significant difference between the test scores ($p > 0.0002$, $df = 9$, and $t = 6.1347$). Although a small sample, this statistical significance strengthens earlier results published by the authors (Edathil, Ranmuthugala, & Symes, 2013), which clearly indicated that real-time formative feedback improved learning and performance. While Figure 1 showed the performance summary of 10 out of the 24 students who utilised the tool to improve their scores, Figure 2 showed the extent to which the scores were improved. This improvement was due to the opportunity to re-visit the problem and self-review their own work, which might have resulted from minor errors or incorrect processes. The rest of the cohort passed the assessment in their first attempt and chose not to utilise the multiple attempt option to improve their scores. It can be seen that all the students improved their initial scores ranging from 11% to 167% due to the instantaneous

feedback available during the assessment task (although some did not meet the required pass level of 50%). It was interesting to note that two of the high performers who scored 80% or more also used the opportunity to further improve their scores. Thus, although the tool was targeted to assist the weaker students, it also motivated the high performers. The confidence levels and competence of the students improved through better understanding of their own errors.

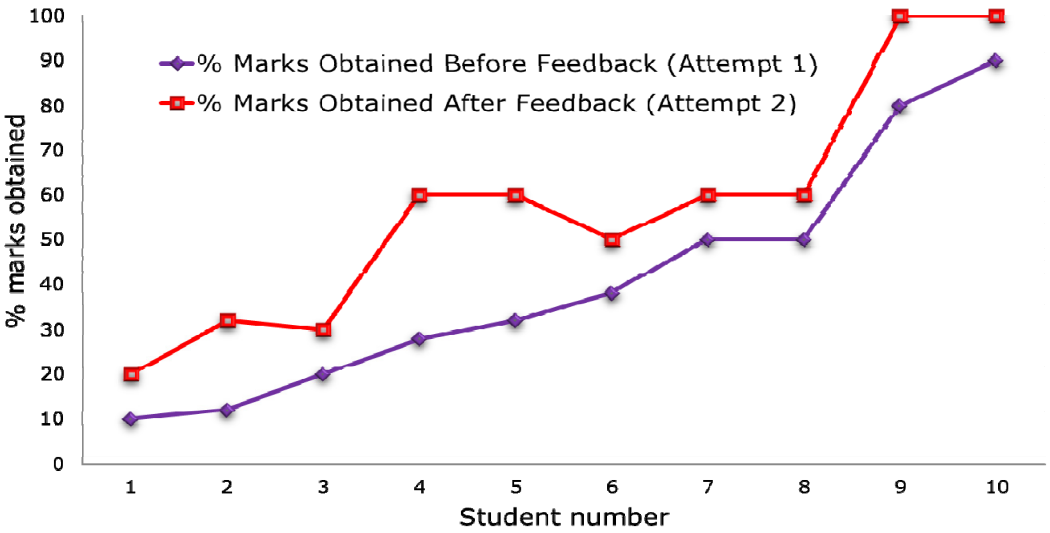

Figure 1. Performance before and after formative feedback.

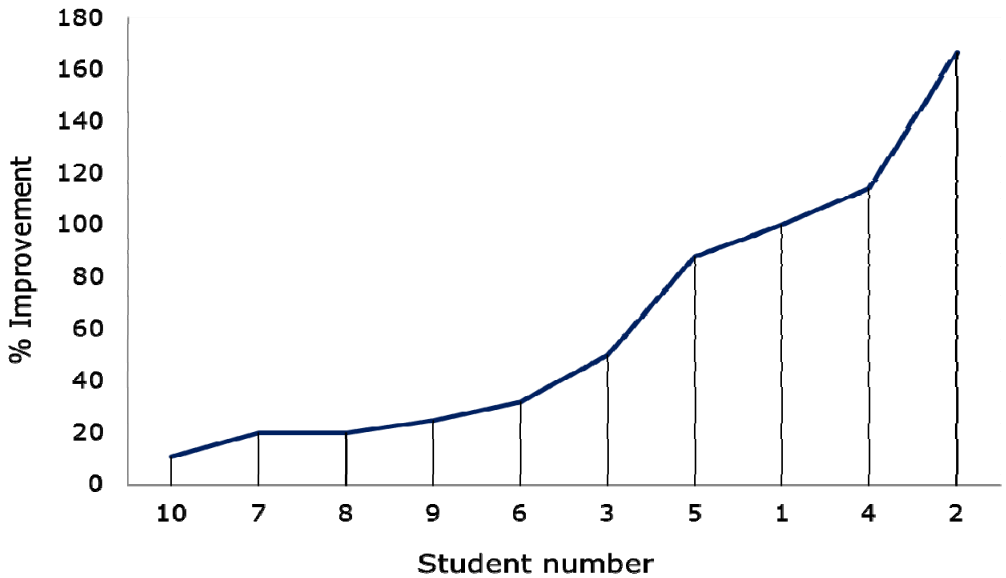

Figure 2. Improvement (%) in performance.

Effectiveness of the method of improving student learning was evaluated through seeking student feedback. Both Likert-type and open-ended responses were sought from the entire student cohort of the 24 students through a survey launched using Survey Monkey, with 33% of the students responding to the survey. While the results reported are based on the limited study sample, similar results and responses were repeatedly observed in student cohorts over the previous two years.

Some students perceived that the mathematical content in the course was irrelevant to their work roles, for example, one student stated, "Talking to marine engineers working in the shipping industry, very little of what is learnt is actually used at sea".

However, a shift of perception was evident after the approach adopted in this study, as seen in Figure 3. None of the students felt that the studies were irrelevant to their work, with the majority of students (75%) realised the necessity of mathematical ability in their profession. This was despite the fact that more than a third of the students found difficulties in learning of mathematics content at the level required for the course (see Figure 4) and at least 25% of the students perceived that it is a barrier to their learning and overall performance (see Figure 5). One of the reasons that could explain this shift of perception was relating theory to practice, as can be seen in Figure 6 with two thirds of the students responded positive to the integrating of theoretical units like Marine Thermodynamics with operational units, such as Marine Engineering Knowledge, indicating that it enhanced their learning and showed the relevance to their work roles.

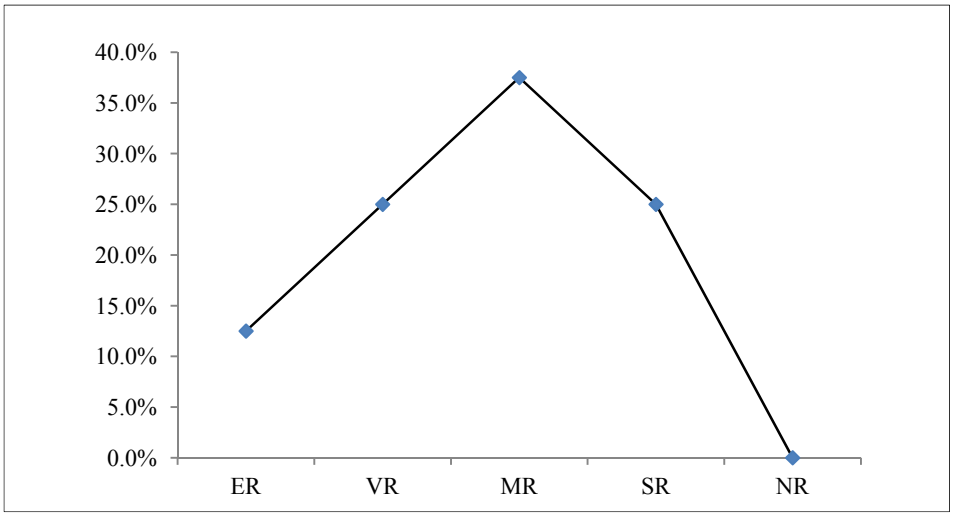

Figure 3. Students' responses to the relevance of maths. (*Note.* ER = Extremely relevant; VR = Very relevant; MR = Moderately relevant; SR = Slightly relevant; and NR = Not at all relevant)

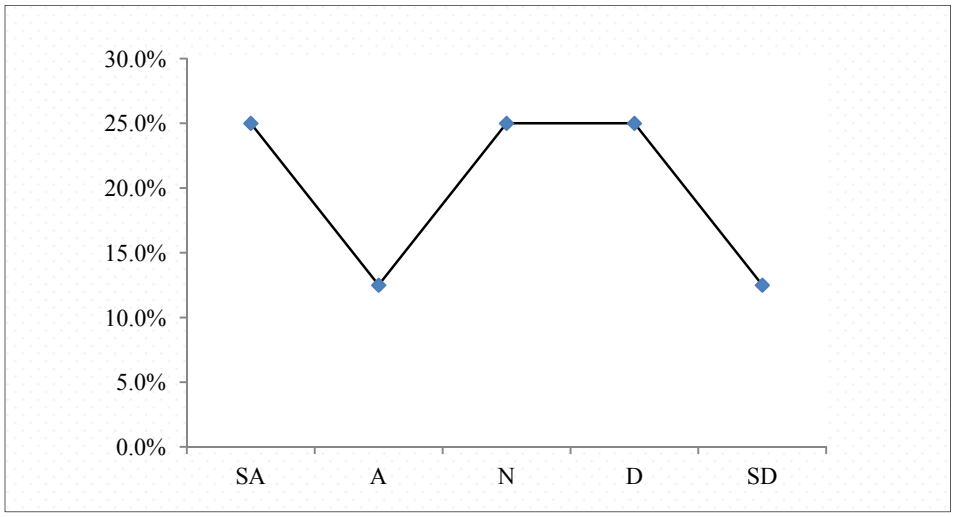

Figure 4. Students' responses on the difficulty with the maths content in the course. (*Note.* SA = Strongly agree; A = Agree; N = Neutral; D = Disagree; and SD = Strongly disagree)

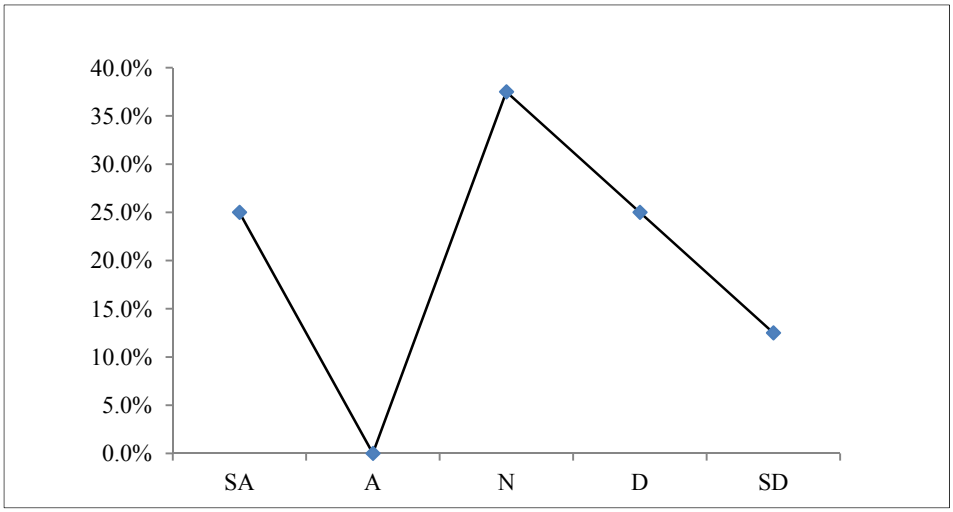

Figure 5. Students' responses on maths being a barrier to their performance.

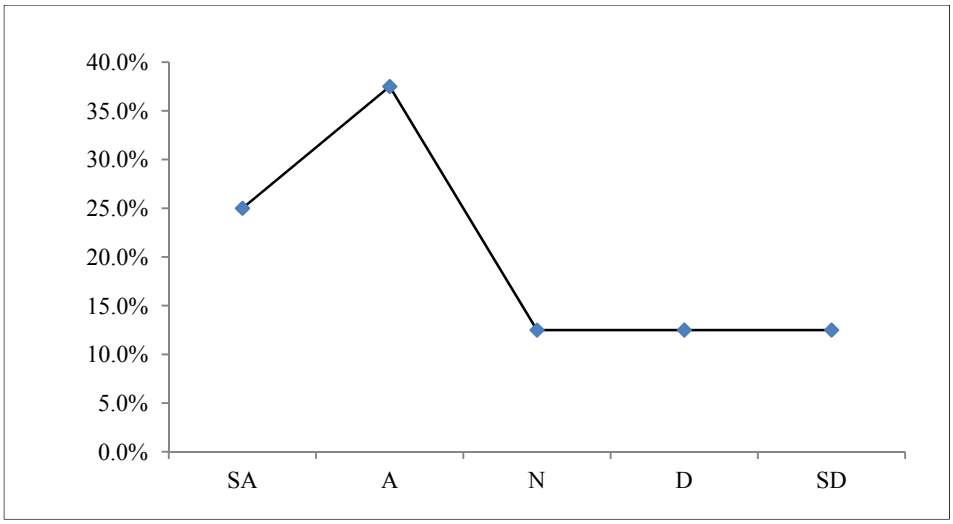

Figure 6. Students' responses to integrating units.

Students' learning and assessment experience clearly indicated their satisfaction obtained through self-directing their studies, resulting in enhancing the motivation among 75% of the students (see Figure 7). The two main reasons were the ability to see the relevance of their learning and promptness in the feedback that reduced fear and apprehension in the uncertainties of the results due to traditional delayed feedback.

As this assessment tool was designed for internal formative assessments, it had limitations in utilising it in the final examination. Although the students felt that it had the potential for greater flexibility in delivery and assessment, they felt that it did not always assist them in the final summative assessments. Furthermore, additional detailed feedback was required to locate where the students made mistakes, thus requiring some improvements in the tool and providing more meaningful feedback. Some of the students' responses were:

> It does not account for making slight errors in calculations. Worked solutions still need to be marked….
> This computer test is good but I think paper work should be taken into account.
> I enjoyed it, thought it was a great way to get instant feedback on questions.
> I like the feedback, but it was not helpful for the final exam.
> Less class time = better!

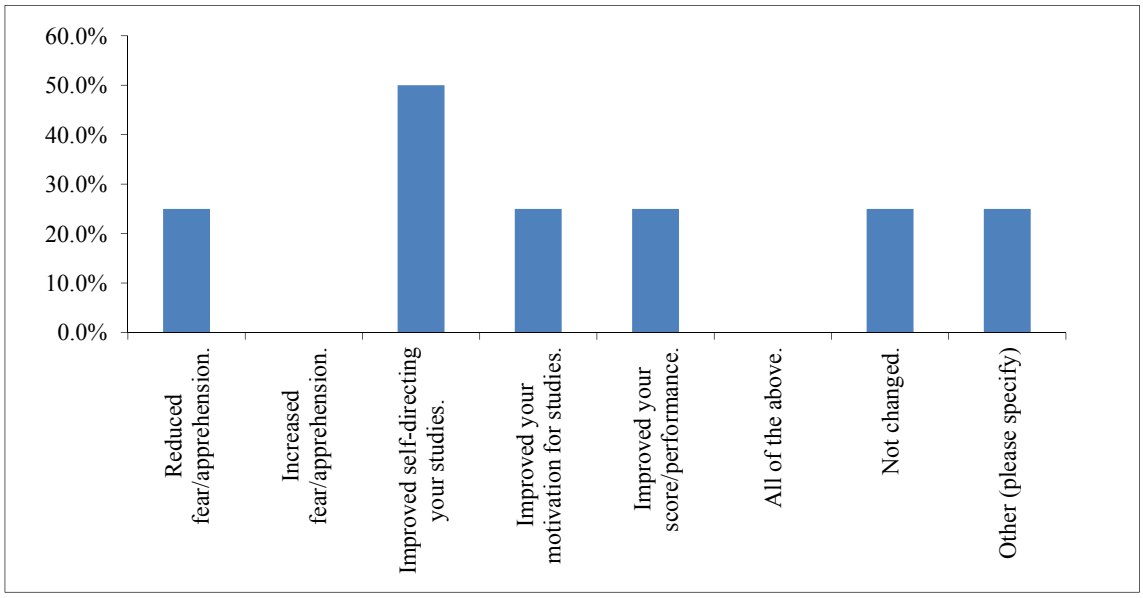

Figure 7. Students' experience with the method adopted.

Conclusions

This study and results were of high statistical significance and clearly indicated that real-time formative feedback enhanced motivation and self-directed learning and improved performance of the students reinforcing earlier work (Black et al., 2003; Brown, 2004; Gibbs & Simpson, 2004; Oates, 1989). It further proved that mathematics is not a barrier to learning when learners are self-directed and motivated, particularly when the relevance of mathematics in engineering studies is realised by learners through integrated theory and practical applications. The study findings suggest that minimal maths or just-in-time maths strategies alone are not sufficient to enhance learning of mathematics in engineering. It further indicated that classroom learning must be supplemented by flexible learning approaches. Although real-time "product feedback" improved performance, it was learnt that "product feedback" needs to be supplemented by "process feedback" in real-time to make formative assessments more effective and meaningful. This will be achieved through further developments to the tool and will be tested against future cohorts.

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The Effects of Teaching With Graphic Organizers on the Thinking Intelligence of Students

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This study sought to design a pedagogical activity using multiple graphic organizers to enhance the thinking intelligence of students. The study consisted of a quasi-experiment with a nonequivalent group and pretest-posttest design. The targets of the study were students aged 11. An experimental teaching session was conducted continuously for 12 weeks to compare the effects of teaching with multiple graphic organizers and teaching with concept mapping on the thinking intelligence of students in the experimental groups as compared with that of the students in the control group (CG). To examine the differences in the thinking intelligence of students, results of the study were analyzed with Analysis of Covariance (ANCOVA). Data analysis showed that the students who had received teaching with multiple graphic organizers had better thinking intelligence as compared with the students who were taught with the concept mapping method and that there was a significant effect size. This indicates that multiple graphic organizers produce significant positive results on the thinking intelligence of students.

Keywords: multiple graphic organizer, thinking intelligence, concept mapping

Introduction

Students are receiving new knowledge every day, but they are unable to link it to the old knowledge that they have already learned in the past, therefore, they are unable to develop a complete, comprehensive, and practical scientific knowledge system that could help solve problems (National Research Council (NRC), 2012). According to Bromley, Vitis, and Modlo (1995), there are four basic types of knowledge, namely, relational knowledge, conceptual knowledge, sequential knowledge, and circulating knowledge. Concept mapping is only one form of the graphic organizers. It is a skill to relate one concept to another (Friedman, 2010).

Kassem (2005) has proven that many thinking skills and strategies can be mentored. Graphic organizers can stimulate creativity and thinking (Sibbet, 2008). In this study, we compare teaching with multiple graphic organizers with teaching using concept mapping to investigate which method stimulates the thinking of students better. By doing so, the study also integrates and updates the knowledge system.

Literature Review

Graphic Organizers

Graphic organizers help students pay attention to important facts, expand new knowledge, enhance

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conceptual understanding, and promote cognitive and thinking intelligence (Gallavan & Kottler, 2010). In the 21st century, it is necessary to use graphic organizers to construct cognitive skills in developed countries (Sibbet, 2008).

Not all graphic organizers are suitable for all situations, teachers who use graphic organizers should know the limitations of graphic organizers (Gallavan & Kottler, 2007). Every scholar categorizes and compares graphic organizers differently. Generally, according to Gallavan and Kottler (2007), Baxendell (2003), and Bromley et al. (1995), graphic organizers may be categorized into seven types based on their different knowledge types and functions, as shown in Table 1.

Table 1

Different Forms and Functions of Graphic Organizers

Type of knowledge	Graphic organizer	Function
Circulating	Circle chart	Graphics showing repeating cycles
Sequential	Flow chart	Graphics showing sequences and processes
Conceptual	Storyboard	Graphics to compile different objectives and outcomes
	Concept map	Graphics comprise of one core concept and other secondary concepts
	K-W-L	Graphics showing the unknown, desire to learn, and the learnt knowledge
	Venn diagram	Graphics showing the similarity, differences, and relations of two or more concepts
Relational	Relational organizer	Graphics showing types, categories, or classifications

Note. K-W-L: K (What you already know about the topic), W (What you want to or will learn about it), and L (what you learnt about it).

Merkley and Jefferies (2000) argued that although many studies have proven that graphic organizers are beneficial to learning, unfortunately, they are rarely applied in everyday teaching by teachers. The above perspectives have been adopted as the theoretical basis for the design of learning environments in this study. The graphic organizers categorized in Table 1 are used as tools for experimental teaching to teach scientific concepts in this study.

Thinking Intelligence

Bransford, Brown, and Cocking (1999) believed that scientific learning is also about learning to question, collect, analyze, and interpret data, construct critical comments, and apply scientific knowledge (NRC, 2012).

In his Triarchic Theory of Intelligence, Sternberg (1985) suggested that each individual human body possesses analytical, innovative, and practical intelligence in varying proportions and equilibrium conditions. Their implications are presented in Table 2.

Table 2

The Three Different Forms of Thinking Suggested by Sternberg's (1985) Triarchic Theory of Intelligence

Form	Implication
Innovative thinking	Solves problems using knowledge, skills, and judgments
Analytical thinking	Solves problems based on past experiences or be able to grasp new knowledge quickly
Practical Thinking	Combines knowledge in daily life to build up the ability to handle daily routines

Based on the above perspectives, thinking intelligence is similar to Sternberg's (1985) Triarchic Theory of Intelligence. Based on the theories suggested by scholars, this study defined thinking intelligence as the three types of thinking, namely, analytical thinking, innovative thinking, and practical thinking.

Some graphic organizers can even enhance the inductive reasoning and deductive reasoning of the learners,

while others can encourage innovative thinking (Gallavan & Kottler, 2007). Therefore, graphic organizers are helpful tools to promote scientific thinking intelligence.

Methodology

Research Objective and Question

This study sought to design different teaching environments with graphic organizers and to explore the level of thinking intelligence of students in these environments. The experimental groups were the multiple graphic organizer group (MGOG) and the concept mapping group (CMG). A quasi-experiment was also conducted. The study question was constructed based on the study objective: Are there differences in the posttest thinking intelligence of elementary school students in the MGOG, the CMG, and the control group (CG)?

Research Objects

According to the Theory of Cognitive Development suggested by Piaget (1969), after 11-year-old, a human enters the formal operational stage. The advancement from the concrete operational stage to the formal operational stage is a big leap and is a good time to use graphic organizers to help students perform formal operational thinking. Due to that, this study has selected 11-year-old students as its study subjects (77 students in total).

Teaching Design

The design of teaching in this study was based on the studies related to graphic organizers. The students were divided into three groups: the MGOG, the CMG, and the CG.

1. The MGOG: Multiple graphic organizers were included in the lessons, and the results were interpreted based on literature review and induction. Based on the teaching objective of each lesson or activity, the concepts students need to learn were illustrated and different graphic organizers were used to help students understand such concepts;

2. The CMG: Concept maps were included in the lessons, and based on the teaching objective of each activity, the concepts students need to learn were illustrated. Concept mapping was then conducted to help students understand important concepts;

3. The CG: Lessons were conducted using traditional verbal method.

This study employed a quasi-experiment design and the 11-year-old students recruited were divided in different experimental scenarios. To prevent internal validity threats, results of the Natural Science subject of the students were considered covariates (see Table 3), and Analysis of Covariance (ANCOVA) was conducted on the post-experimental thinking intelligence of the students. The posttest thinking intelligence of the three groups of students was compared.

Table 3

Teaching Design Using Graphic Organizers and Concept Maps in Different Experimental Groups

Activity	Teaching with multiple graphic organizers	Teaching with concept mapping
Flower blossoms, yielding of fruits, and production of seeds	1. Structures of flower—Conceptual map; 2. The flowering and fruiting of plant—Flow chart; 3. The dissemination method of fruits and seeds—Storyboard.	1. Structures of flower—Concept map; 2. The flowering and fruiting of plant—Concept map; 3. The dissemination method of fruits and seeds—Concept map.

Research Tools

To understand the differences in the thinking intelligence of students after attending the lessons, a thinking intelligence questionnaire was developed and students in the MGOG, the CMG, and the CG were tested respectively.

The questionnaire was designed based on the innovative thinking, analytical thinking, and practical thinking suggested by Sternberg's (1985) Triarchic Theory of Intelligence and contains a total of six questions. Each question refers to one type of thinking ability and each type of thinking ability is presented in two questions (see Table 4).

Table 4

Two-Way Table for Thinking Intelligence Questionnaire and Types of Thinking

Question	Description	Type of thinking
Q1	How do you differentiate lepifera, Southern maidenhair fern, tuberous sword fern, and bird nest fern when you are out in the wild?	Practical thinking
Q5	If you are a gardener, what methods will you use to help the plant produce flowers?	Innovative thinking
Q6	What are the differences between plants growing in the desert and that in the rainforest?	Analytical thinking

Results and Discussion

The Analysis of the Overall Thinking Intelligence of Students From the MGOG, the CMG, and the CG

To investigate the thinking intelligence of different experimental groups, a regression coefficient homogeneity test was first performed, and the "thinking intelligence questionnaire" of students of different groups yielded a result of $F_{(2, 65)} = 0.897$ and $p = 0.413 > 0.05$, which is below the level of significance. This meets the fundamental assumption that regression coefficients of the basic assumptions of homogeneity and ANCOVA can be performed. As shown in Table 5, $F_{(2, 68)} = 4.142$ and $p = 0.020 < 0.05$, which have reached the level of significance. The effect size was 0.110. Cohen (1988) suggested that $\eta^2 = 0.01$, $\eta^2 = 0.06$, and $\eta^2 = 0.14$ may be used to represent the small, medium, and large effect sizes respectively. The bigger the effect size, the more significant differences in the "thinking intelligence questionnaire" score will be produced by the three groups of students and the differences in their thinking intelligence will also be more substantial.

Table 5

ANCOVA of "Thinking Intelligence Questionnaire" of Students of Different Groups

Variation	*SS*	*Df*	*MS*	*F*	Significance	η^2
Between groups	80.248	2	40.124	4.142	0.020	0.110
Errors	649.052	67	9.687	-	-	-
Overall after correction	1,263.239	70	-	-	-	-

Table 6 shows the posttest comparison and analysis of "thinking intelligence questionnaire" produced by different groups. It was found that the mean of adjusted thinking intelligence was 11.282 in the MGOG, 9.242 in the CMG, and 8.844 in the CG. This shows that teaching with multiple graphic organizers produces more powerful effects on the thinking intelligence ability of students as compared with concept mapping and traditional teaching method.

Table 6

Posttest Comparison and Analysis of "Thinking Intelligence Questionnaire" of Students of Different Groups

Dependent variable	Group	*N*	Mean	Mean'	Posttest comparison
Thinking intelligence	MGOG	24	11.71	11.282	-
	CMG	24	8.92	9.242	MGG > CMG
	CG	23	8.72	8.844	MGG > CG

Note. Mean': Mean of covariates after adjustment.

The Comparison of Thinking Intelligence Among the Three Groups

To investigate the three types of thinking ability of thinking intelligence, the "mid-term test results of Natural Science" of the three groups of students were put in ANCOVA analysis to test for regression homogeneity in practical thinking, innovative thinking, and analytical thinking respectively. Analytical thinking yields results of $F_{(2, 65)} = 0.817$ and $p = 0.446 > 0.05$, innovative thinking yields results of $F_{(2, 65)} = 1.530$ and $p = 0.224 > 0.05$, while practical thinking produces results of $F_{(2, 65)} = 0.346$ and $p = 0.709 > 0.05$. All three sets of results above were below the level of significance and met the fundamental assumption that there was homogeneity within group regression. Therefore, ANCOVA analysis could be carried out.

From the ANCOVA of thinking ability of different groups (see Table 7), it can be found that analytical thinking produces a significance level of 0.07 > 0.05, and therefore, it was not significant. This shows that there was no significant difference in the analytical thinking among the three groups. The significance level of innovative thinking was 0.011 < 0.05 and its effect size was 0.126. This indicates that the three groups had significantly different average scores in innovative thinking and means that by excluding the mid-term test results, the experimental groups had different innovative thinking and were about to reach a large effect size. Practical thinking produced a significance level of 0.519 > 0.05 and did not reach the level of significance. This indicates that there was not much difference in practical thinking among the three groups.

Table 7

ANCOVA of Different Thinking Ability of Students of Different Groups

Dependent variable	Variation	*SS*	*Df*	*MS*	*F*	Significance	η^2
Analytical thinking	Between groups	15.745	2	7.872	2.761	0.070	0.076
	Error	191.030	67	2.851	-	-	-
	Overall after correction	252.986	70	-	-	-	-
Innovative thinking	Between groups	14.970	2	7.485	4.822	0.011	0.126
	Error	104.006	67	1.552	-	-	-
	Overall after correction	129.239	70	-	-	-	-
Practical thinking	Between groups	4.979	2	2.490	0.662	0.519	0.019
	Error	251.920	67	3.760	-	0	-
	Overall after correction	314.986	70	-	-	0	-

Table 8 shows the posttest comparison and analysis of thinking ability of students from different groups. Both the analytical thinking and innovative thinking of the MGOG were superior to those of the CG, and the innovative thinking of the CMG was superior to that of the CG.

Table 8

Posttest Comparison and Analysis of Different Thinking Ability of Students of Different Groups

Dependent variable	Group	*N*	Mean’	Posttest comparison
Analytical thinking	MGOG	24	3.627	MGG > CG
	CMG	24	2.802	-
	CG	23	2.509	-
Innovative thinking	MGOG	24	3.566	MGG > CG
	CMG	24	3.462	CGG > CG
	CG	23	2.536	-
Practical thinking	MGOG	24	4.358	-
	CMG	24	3.817	-
	CG	23	3.774	-

Note. Mean’: Mean of covariates after adjustment.

Discussion

From the changes in thinking intelligence of the above three groups of students, it can be found that the thinking intelligence of the MGOG (Mean’ = 11.282) was superior to that of the CMG (Mean’ = 9.242). The thinking intelligence of the MGOG was also superior to that of the CG (reaching the large effect size). The thinking intelligence of the CMG was not significantly different from that of the CG. These study results are consistent with those of Gallavan and Kottler (2010) and Hyerle (2001), which believed that graphic organizers can enhance the thinking intelligence of students. Other than that, the results further show that the performance of the MGOG was superior to that of the CMG. The researcher speculates that this was caused by the following reasons:

1. From the perspective of types of knowledge: Bromley et al. (1995) believed that there are four basic types of knowledge. This shows that there is more than one type of knowledge. Teaching with multiple graphic organizers is designed to teach in a teaching environment using multiple types of graphic organizers and to present different forms of knowledge. Concept mapping teaching uses concept maps and is only able to present one form of knowledge but not all the knowledge forms. Therefore, concept mapping is unable to enhance learning achievements (Stum, 2002);

2. From the perspective of types of thinking: The Next Generation Science Standards of U.S. hopes to develop analytical, innovative, and practical thinking suggested by Sternberg’s (1985) Triarchic Theory of Intelligence. In this study, teaching using multiple graphic organizers is designed to teach with different graphic organizers which, when applied in different thinking forms, can promote the thinking intelligence of students. Concept mapping only teaches with concept maps and is unable to cover all forms of thinking. For example, it is difficult to use concept maps to present the differences between two concepts/objects when practicing critical thinking. Venn diagram can clearly present the similarities and differences between concepts/objects and allows the consideration of all potential problem-solving paths. This allows inferential thinking and further promotes innovative thinking. Concept maps, however, do not allow the compilation of different objectives and outcomes. Therefore, students from the MGOG have better thinking intelligence.

Conclusions and Recommendations

This study is based on Sternberg’s (1985) Triarchic Theory of Intelligence, students are given different

experimental teaching using either multiple graphic organizers or concept maps. This study aims to explore the effects of teaching of this type on the thinking intelligence of students. It is found that multiple graphic organizers can effectively enhance the overall thinking intelligence of students as compared with concept mapping or traditional teaching. Therefore, teaching using multiple graphic organizers in practical teaching environment can be popularized to help enhance thinking intelligence and further promote the analytical, innovative, and practical thinking of students.

From the above results, it can be found that teaching 11-year-old students using multiple organizers can enhance their thinking intelligence and is superior to concept map learning or the traditional learning. This shows that incorporating multiple graphic organizers in teaching can enhance the thinking intelligence of students.

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Children's Knowledge of the Concept of Print (Books) as an Element of Early Literacy

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The article deals with the issue of early literacy in Slovenia, especially children's knowledge of the concept of print (books). The article defines literacy, emergent literacy, as well as initial and transitional literacy as the elements of early literacy. Further more, an instrument for establishing and/or verifying a child's knowledge of the concept of print (books) is presented. This is followed by a presentation of the study in which we established the awareness of the concept of print (books) as an important element of early literacy among 720 first-grade male and female pupils from randomly selected Slovenian primary schools. The results showed that more than 80% of the surveyed children could orient themselves in a book, while more than 80% distinguished between images and texts, knew the direction of the text, correctly showed the beginning and the end of the book, and knew how to use the book terminology. We cannot be satisfied with the results, and therefore, we propose the so-called print referencing method, with which preschool and school teachers can advance children's knowledge of the concept of print.

Keywords: early literacy, concept of print (books), first-grade pupils

Introduction

Regardless of the fact that understanding of the concept of literacy has changed throughout history and is still changing according to the current needs of society, in which individuals, i.e., literacy carriers, researchers, language policy makers, and practitioners, agree that preventive action in the area of early literacy reduces the number of not fully literate children in lower primary school grades (i.e., children who fail to read and write fluently), which is mainly true for less privileged children (Snow, Burns, & Griffin, 1998). Such action facilitates the wide implementation of the systematic learning of early literacy already within preschool programmes, so that delays in early literacy do not escalate into subsequent reading and writing disabilities that would be difficult to be eliminated, and what is more, their elimination would be intensive and expensive. One should not forget that being literate in an African tribe means something else than being literate in a developed European or North American society.

Literacy

In 1951, United Nations Educational Scientific and Cultural Organization (UNESCO) defined that a literate person is the one "who can, with understanding, both read and write a short, simple statement on his/her everyday life" (Harris & Hodges, 1995, p. 140). In 1956, UNESCO's definition of a literate person was supplemented: "A person is functionally literate who can engage in all those activities in which literacy is

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required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development" (Baker & Street, 1996). Apart from reading and writing, this definition of the concept of literacy included calculation. It is derived from Gray's (1956) definition of functional literacy (Pečjak, 2010, p. 13), stating that a person is literate if he/she is able to effectively engage in all those activities in which literacy is normally assumed in his/her community and also for enabling him/her to continue to use reading, writing, and calculation for his/her own and the community's development.

In terms of its constituent parts, literacy can be divided into three groups (Pečjak, 2010, p. 13). The first group includes the definitions of literacy where the emphasis is on reading competence. According to the International Association for the Evaluation of Educational Achievement (IEA), reading literacy is defined as the "ability to understand and use those written language forms required by society and/or valued by the individual" (Elley, Gradišar, & Lapajne, 1995, p. 19). In the Program for International Student Assessment (PISA) 2006 research, writing literacy was defined as the "understanding, using, and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society" (Štraus, Repež, & Štigl, 2007, p. 77). Reading literacy, besides natural-scientific and mathematical literacy, is the main study subject of the PISA research. Moreover, in the study of De Coster, Baidak, Motiejunaite, and Noorani (2011), reading literacy is defined as the "general ability to understand, use, and reflect on written texts, in order to achieve the goals of the individual and the society" (p. 7). This definition exceeds the cognitive elements of reading (e.g., decoding of words and understanding of the text), encompasses other aspects, e.g., motivation and finding one's way in written texts, and is also congruent with Pierre's (1994) definition of literacy stating that reading literacy is a kind of "relationship that the reader develops with a written word" (p. 266). The second group includes those definitions of literacy which state that literacy is a basic or primary ability of reading and writing that enables a comparison in terms of time and space (Graff, 1987). It also includes Goody's (1999) definition of literacy stating that it is the ability to read and write. The third group of definitions of literacy includes those definitions that also take some other skills into account (e.g., calculation), besides reading and writing. One of those is UNESCO's (1978) definition of literacy, which is derived from Gray's (1956) definition of literacy (Pečjak, 2010, p. 13).

Pečjak (2010) defined literacy as:

> A complex ability that encompasses a number of skills and abilities to read and write (including calculation), where the emphasis is on different development of literacy depending on age, gender, education, and other factors (e.g., social context). Literacy is a notion determined in cultural, social, and historical-geographical terms. The basic element of all types of literacy is the reading literacy. (p. 15)

According to Marjanovič (2010), literacy is increasingly understood as:

> A continuation of the emergent literacy which has its origins in early social interactions between a baby/toddler and the first important person in their speech development, and is at the same time strongly related to the environment abounding with symbols. (p. 29)

Early Literacy

The development of a child's early literacy was recognised as very important for the existence and development of every nation (Marjanovič, 2009, p. 28). Therefore, at the beginning of this century, some basic international recommendations for the development of preschool education were formulated (OECD, 2001;

2002; 2006), including the recommendation emphasising that in curriculum documents and the overall organisation of the life of children in kindergartens, special attention should be paid to children's language development, the development of early literacy, and the creation of a symbolically abundant environment which is responsive in terms of communication.

Early literacy is a process (Pečjak & Potočnik, 2011, p. 62), in which all communication activities (i.e., listening, speaking, reading, and writing) are closely interwoven, yet it is difficult to divide different levels of literacy in this process.

The first level in the early development of literacy is emergent literacy (Barone, Malette, & Xu, 2005), which is followed by the level of initial literacy and the level of transitional literacy. The model of development of early literacy by Barone et al. (2005) is underpinned by the findings of some authors (Henderson & Templeton, 1986; Bear & Barone, 1998) that the development of literacy is closely related to the development of reading, writing, and familiarity with words. Table 1 shows the indicators of the development of early literacy (Barone et al., 2005, p. 8).

Table 1

Indicators of the Development of Early Literacy

Level	Reading	Writing	Familiarity with words
Emergent literacy	He/she does not have a notion about a word; He/she pretends to read; He/she can memorise familiar texts; When asked about what he/she has read, he/she can state some fragments but cannot summarise the contents.	He/she pretends to write; He knows the difference between an image and a piece of writing or a record.	Scrawl; He/she uses random letters or numbers or only the initial consonants to write words.
Initial literacy	He/she has a notion about a word; He/she reads word by word; He/she vocalises (reads with a low voice or whispers) also when reading silently; If asked about what he/she has read, he/she most often repeats the contents with the same words.	He/she writes letter by letter; He/she writes slowly but other persons can read what he/she has written; He/she does not write much (of a text).	He/she moves from the use of initial and final consonants and starts including vowels in monosyllabic words (e.g., "bat").
Transitional literacy	He/she reads silently; He/she reads fluently; He/she reads groups of words more often than word by word; If asked what he/she has read, he/she can literally repeat, summarise the contents in his/her own words, or explain his/her attitude to the text.	He/she can write word by word and individual groups of words; He/she writes faster and can write more or a longer text; In the process of writing, he/she can focus on the meaning of the sentence and not only on the spelling of individual words.	He/she has a notion about the correct pronunciation and spelling of most words; He/she can have some difficulties with writing longer, less familiar words; He/she recognises that certain words are written differently than pronounced (e.g., "love" and not "luv", "meat" and not "mit").

The cornerstone of learning to read and write is the spoken language. The speaking and listening competence a child acquires in the preschool period is decisive for his/her subsequent achievements in the area of reading and writing and for his/her overall school performance. Children who fail to develop spoken language skills in this period have difficulties in school with catching up and often lag behind their peers. This lag can be observed even before starting school (Biemiller, 2006; Hart & Risley, 2003; Scarborough, 2001; Snow et al., 1998). Children develop the skills of spoken language on five linguistic levels (Roskos, Tabors, &

Lenhart, 2009, p. 1): (a) the semantic (development of the meanings of words that children hear and say when talking to other people); (b) the syntactic (learning of the rules and how the words are interconnected); (c) the morphological (understanding of the handling of the smallest semantic units, e.g., "preschool" consists of two morphemes: "pre" and "school"); (d) the phonological (understanding of the phonological structure of the language; already before birth and after it, children learn all phonemes or sounds of their language); and (e) the pragmatic (understanding of the social use of language, e.g., the ways of saying hello, expressing gratitude, and changing of the roles in a conversation) levels. Already before they start school, children begin developing: (a) an understanding of the spoken language to acquire listening and speaking skills; (b) vocabulary, to build fundamental knowledge about language; (c) phonological awareness and knowledge of the alphabet to understand the phonological structure of the language; and (d) awareness of the concept of print (books). For children to become literate, they must write because writing helps them learn to read and reading helps them learn to write; to learn both (reading and writing), they need spoken language. Preschool and school teachers must plan the process of learning a language so that they can help children exceed their knowledge of the language they have already acquired (Roskos et al., 2009, p. 4). Children's spoken language should be developed in a process of active learning in everyday conversations, where their instructions should include the principle of guided participation, the principle of constructivism, and the principle of experiential learning. To achieve this, preschool and school teachers must become mindful language planners and innovative in their everyday conversations with children (Assel, Landry, Swank, & Gunnewig, 2007).

The development of a child's literacy is affected by several factors, such as the child's intellectual ability, the family and kindergarten environment, and within these factors also family reading/joint reading of the child and his/her preschool teachers, as well as the belief of the child's parents and his/her preschool teachers in the importance of such reading for the development of the child's language competence and early literacy. In the family environment, Foy and Marn (2003) highlighted joint reading of the child and his/her parents, the parents' belief in the importance of reading for the child's speech development, and the frequency of parents' interaction with books as predictors of the child's language competence and early literacy. Joint reading of the child and his/her parents and preschool/school teachers positively affects the development of the child's speech and early literacy, but only if it is of high quality, i.e., if reading a book also includes a conversation, the posing of open questions and searching for different ways of presenting the content of a book, e.g., a symbolic game, drawing, etc.. Especially the preschool teacher should read aloud to children with appropriate intonation, changing of the voice (without raising the pitch), a reasonable division of the text, and appropriate emphases. According to Kleeck (2006, as cited in Marjanovič, 2010), in the kindergarten environment:

> The preschool teachers' belief in children's development and development of early literacy in early childhood is of key importance. The preschool teachers who believe that early childhood is a period when a child is susceptible to speech development, talk frequently with children, encourage them to ask questions, and answer such questions; those preschool teachers who believe that it is important to encourage pre-reading and pre-writing skills in early childhood offer children a lot of printed materials, picture books, and children's books, encourage them to engage in activities involving symbolic expression and, if children show interest, teach them to write letters and read words. (p. 39)

Knowledge of the Concept of Print (Books) as an Element of Early Literacy

The findings about print are those that occur the first in early literacy, before graphical and phonological awareness, knowing the relations between letters, sounds, and reading. Clay (1972) emphasised that, when

reading a book, a child first develops the knowledge of what is the cover page, what are the pages of the book, how to turn the pages, etc.. He/she starts to become aware (Lenhart & Roskos, 2003) that a book is not intended for tearing apart or doing drawings inside. He/she learns the general rules about a book: The text in a book continues, there is not a new story on every page and pictures/illustrations additionally facilitate the understanding and following of the story.

The findings about print can be divided into two large groups (Pečjak, 2010, p. 106): knowledge of the forms and knowledge of the functions of print. Knowledge of the forms includes findings about printing agreements and conventions, e.g., awareness that a book has a beginning and an end; that the letters follow each other in a certain direction; that, e.g., European start reading from the upper left corner, proceed from left to right, and in a downward direction; that the text is composed of individual words which are composed of letters; that there is no space between the letters in one word, etc.. Knowledge of the functions of print concerns the purposes and use of print, e.g., the awareness that words are the carriers of the message, namely, they can be used to convey a message to oneself and others; that words are used by other people; that children can use them as well; that print enables us to get around easier and better in our environment, etc..

To verify a child's understanding of the notions related to print (books), the preschool or school teachers can help themselves with different checklists. One of them is the checklist by Barone et al. (2005), which records whether a child can orient himself/herself in the book, whether he/she distinguishes the images from the text and to what extent, whether he/she understands the direction of the print (writing), whether he/she understands and knows how to show (identify) the beginning and the end of the story, and to what extent he/she is familiar with and knows how to use the book terminology (e.g., knows how to show a word, letter, punctuation marks, etc.).

To implement this test, the preschool or school teacher requires a book (picture book) with pictorial and textual contents appropriate for children's age (and their communication abilities). Before the test, the preschool or school teacher instructs the children: "I will show you a book, ask you different questions, and give tasks in connection with it, and you will tell me what you know". The preschool or school teacher gives the children instructions from the checklist and marks the correct answers with "√" and the incorrect ones with "×". The result of the test is a short descriptive mark of the children's knowledge of the concept of print (books) (see Table 2).

Table 2

Checklist of Children's Understanding of the Notions Related to Print (Books)

Orientation in the book	Distinguishing between the images and the text	Direction of the print	Knowing the beginning and the end of the book	Use of the book terminology
Shows the beginning and the end of the book; Shows the title of the book; Tells why he/she thinks the book has a title.	Shows the first image in the book; Shows the written text; Shows where to begin reading.	Shows how to read one line; Shows how to read the text on one page.	Shows the beginning of the story in the book; Shows the end of the story in the book; Shows where the text starts on one page; Shows where the text ends on one page.	Shows the top and the bottom of the page; Shows a word; Shows a specific word; Shows a letter; Shows a lower-case letter; Shows an upper-case letter; Shows a full stop; Shows a question mark; Shows an exclamation mark.

Methodology

Aim of the Study

The aim of the study is to establish children's knowledge of the concept of print (books) so as to improve the current language practice in the first grades of primary schools.

Method

The descriptive and causal non-experimental methods of pedagogical research were used (Sagadin, 1993). The quantitative data processing was conducted at the level of descriptive statistics, stating the frequency and percentage. The data are shown in Tables 3-7 (Kožuh & Vogrinc, 2009).

Participants

The study was conducted in April 2013. The study included 34 pupils from randomly selected Slovenian primary schools. The sample comprised 720 first-grade boys and girls who were in the 2012-2013 school year attended the following primary schools: Prof. Dr. Josip Plemelj Primary School in Bled, Ivan Kavčič Primary School in Izlake, Trebnje Primary School, Alojzij Šuštar Primary School, Tabor Primary School in Logatec (Hotedrščica Branch School), Šmartno pri Litiji Primary School, Ormož Primary School, Ivan Tavčar Primary School in Gorenja vas, Dobrova Primary School, Stane Žagar Primary School in Kranj, Horjul Primary School, Livada Primary School in Ljubljana, Miran Jarc Primary School in Črnomelj, Primož Trubar Primary School in Velike Lašče, Mirna Primary School, Loka Primary School in Črnomelj, Primary School in Poljane pri Škofji Loki, Šenčur Primary School, Metlika Primary School, Beltinci Primary School, Lesce Primary School, Anton Aškerc Primary School in Velenje, Ferdo Vesel Primary School in Šentvid pri Stični, Cvetko Golar Primary School in Škofja Loka, Vencelj Perko Primary School in Domžale, France Bevk Primary School in Ljubljana, Hero Maks Pečar Primary School in Ljubljana, Domžale Primary School, Šalek Primary School in Velenje, Blaž Arnič Primary School in Luče, Tončka Čeč Primary School in Trbovlje, Dr. France Prešeren Primary School in Ribnica, Rudolf Ukovič Primary School in Podgrad, and Železniki Primary School.

Measures

A child's awareness of the concept of the print (books) was verified with the above checklist (see Table 2) by Barone et al. (2005). The study was based on the book entitled *Muca Copatarica* (Cat the Slipper Cobbler) by Peroci (1957).

Results

More than one-half of the surveyed children could orient themselves in a book, i.e., 497 children (69.02%) showed the beginning and the end of the book correctly, while as many as 675 children (93.75%) showed the title of the book correctly (see Table 3).

Table 3

Orientation

Task	No. of correct answers	Percentage of correct answers (%)
Show the beginning and the end of the book	497	69.02
Show the title of the book	675	93.75

Over three-quarters of the surveyed children distinguished between the images and the text. Five hundred and seventy-nine children (80.41%) showed the first image in the book correctly, as many as 639 children

(88.75%) showed the written text correctly, and 677 children (94.02%) correctly showed where to start reading (see Table 4).

Table 4
Distinguishing Between the Images and the Text

Task	No. of correct answers	Percentage of correct answers (%)
Show the first image in the book	579	80.41
Show the written text	639	88.75
Show where to begin reading	677	94.02

Most surveyed children understood the direction of the print. As many as 700 children (97.22%) correctly showed how to read one line, while 661 children (91.80%) correctly showed how to read the text on one page (see Table 5).

Table 5
Direction of the Print

Task	No. of correct answers	Percentage of correct answers (%)
Show how to read one line	700	97.22
Show how to read the text on one page	661	91.80

More than three-quarters of the surveyed children understood and showed the beginning and the end of the story as well as the beginning and the end of the text on one page. Six hundred and twenty-four children (86.66%) correctly showed the beginning of the story in the book, 563 children (78.19%) correctly showed the end of the story in the book, 662 children (91.94%) correctly showed where the text started on one page, while 633 children (87.91%) correctly showed where the text ended on one page. It is interesting that more children (over 80%) correctly showed the beginning of the story in the book and the beginning and the end of the text on one page and fewer children (less than 80%) correctly showed the end of the story in the book (see Table 6).

Table 6
Knowing the Beginning and the End of the Book

Task	No. of correct answers	Percentage of correct answers (%)
Show the beginning of the story in the book	624	86.66
Show the end of the story in the book	563	78.19
Show where the text starts on one page	662	91.94
Show where the text ends on one page	633	87.91

The use of the book terminology differs with tasks. Six hundred and twenty-four children (86.66%) correctly showed the top and the bottom of the book, 667 children (92.63%) correctly showed a word, 636 children (88.33%) correctly showed a specific word, 711 children (98.75%) correctly showed a letter, 710 children (98.61%) correctly showed a specific letter, 521 children (72.36%) correctly showed a lower-case letter, 615 children (85.41%) correctly showed an upper-case letter, 648 children (90%) correctly showed a full stop, 506 children (70.27%) correctly showed a question mark, and only 427 children (59.30%) correctly showed an exclamation mark (see Table 7).

Table 7
Use of the Book Terminology

Task	No. of correct answers	Percentage of correct answers (%)
Show the top and the bottom of the page	624	86.66
Show a word	667	92.63
Show a specific word	636	88.33
Show a letter	711	98.75
Show a specific letter	710	98.61
Show a lower-case letter	521	72.36
Show an upper-case letter	615	85.41
Show a full stop	648	90.00
Show a question mark	506	70.27
Show an exclamation mark	427	59.30

Discussion and Conclusions

The results of the study showed that 81.38% of the surveyed children could orient themselves in a book, 87.72% distinguished between images and text, 86.17% correctly showed the beginning and the end of the book, 84.23% knew how to use the book terminology, and most children (94.5%) knew the direction of the text.

We cannot be satisfied with the results. We would have expected that all of the surveyed first-grade pupils can orient themselves in a book, distinguish between images and text, know the direction of the text, where the beginning and the end of the book are, and how to use the book terminology. If the poor knowledge and use of the book terminology can be ascribed to the fact that the development of meta-linguistic ability (the knowledge, understanding, and use of linguistic terms, including word, syllable, letter, full stop, question mark, and exclamation mark) is perhaps one of the difficult attainable operational linguistic objectives in the first educational period of primary schools (Poznanovič et al., 2011, pp. 8-13). This cannot apply to the knowledge and understanding of the orientation in a book, the direction of the print, finding the beginning and the end of the book, as well as distinguishing between images and text, namely, those concepts with which children become acquainted already in the preschool period. In the revamped *Primary School Curriculum of the Slovenian Language* (Poznanovič et al., 2011, p. 9), one of the operational goals is the individualised, gradual, and systematic development of the ability to read and write texts, which also consists of the systematic development of pre-literacy ability, i.e., visual distinction; audio distinction and division; orientation on the body, in space, and on paper; correct body posture and way to hold a pencil; etc.. The new curriculum does not explicitly deal with raising awareness of the concept of print (books).

There are many valid methods for raising a child's phonological awareness and fewer of those which raise awareness of the concept of print. One of such methods is the so-called print referencing, which is used during reading aloud to motivate the young "reader" for the print by emphasising the forms, functions, and characteristics of the print (Zucker, Ward, & Justice, 2009, p. 62). To implement print referencing, educators call children's attention to print with verbal and nonverbal techniques. An example of print referencing is when an adult asks a child to show the first word on a page or asks him/her: "Where are the words on this page?". A study conducted between 2005-2006 by Justice, Kaderavek, Fan, Sofka, and Hunt (2009, p. 67) showed that children whose preschool or school teachers used the print referencing method achieved better results than those children whose preschool and school teachers did not use it, namely in three standardised areas of knowledge of print: awareness of the concept of print, knowledge of the alphabet, and writing of a name. Table 8 presents the objectives, definitions, and examples of the print referencing in reading aloud to preschool

children and primary school pupils (Zucker et al., 2009, pp. 64-65).

Table 8

Print Targets Adressed Through Print Referencing Read Aloud in Early Childhood Settings

Print target	Definition/example
Print meaning domain	
Print function	The function of print is to carry meaning; some special typefaces convey meaning. Sometimes print appears in illustrations (e.g., visible sound): 1. These are Fox's words—He is talking; 2. These words are red because he is angry.
Environmental print	Words present in the environment are portrayed in illustrations (e.g., signs, labels, lists, calendars, recipes, etc.): 1. This jar has the word "Cookies" on it; 2. Let us read these traffic signs.
Concept of reading	The function of print is to convey information or tell a story. There are many things we do when we read: 1. If I want to find out how they solve this problem, I will have to keep reading; 2. Who can tell some things we do when we read?
Book and print organisation domain	
Page order	The order in which book pages are read (i.e., the physical act of manipulating a book): 1. I read this page first and this page next; 2. Where is the front of the book?
Title of book	The role of title as a label and to convey meaning: 1. This is the half title page. It tells us the name of the book again; 2. The title page tells us that this was published in New York.
Top and bottom of a page	Reading in English must occur from top of the page to the bottom of the page: 1. This is the top of the page. The writing starts here; 2. (Move finger down page) I will read this top line, then this line, and then this last line.
Print direction	Reading in English must occur from the left to the right. Some texts are printed with unusual orientations or shapes to convey meaning: 1. (Sweep finger under print) When I read I go this way; 2. These words are printed at an angle so they look like splashing into the water.
Author's role	The role of the author(s)/illustrator(s): 1. The author is the person who wrote the words in this book; 2. The author wrote a dedication to his mother.
Letters domain	
Names of letters	There are names for all the 26 letters: 1. I see a word on this page that starts with an "R"! 2. Who can find letter "S"?
Concept of letter	The purpose of letters in forming words. The same letters can be used in many ways: 1. I see the same letter in these two words; 2. There are three letters in the word "cat".
Upper- and lower- case letters	Letters come in two forms: 1. This is a capital "D". Damian has a capital "D" in his name; 2. Upper-case "S" is the same shape as lower-case "s".
Words domain	
Concept of word in print	Words are distinct units of print and are different from letters: 1. Let us count the words on this page; 2. Who can show me only one word?
Short *vs.* long words	Words have different structures. Some words are short, others are long: 1. Dinosaur is a long word. It has a lot of letters; 2. Which word is longer—"vegetable" or "soup"?
Letters *vs.* words	Letters make up words: 1. This is the letter "G". It is in the word "grow" and "garden"; 2. This is the word "sun". S-u-n spells sun.
Word identification	Some familiar or meaningful words can be identified: 1. This is a picture of a tomato. The word tomato is written beside it; 2. This is the word "the". It appears in this book a lot.

The print referencing method stimulates a child's knowledge of the print and his/her interest in it, as well as develops his/her meta-linguistic understanding of the print. Therefore, it is necessary for this method to become an essential element of linguistic planning in the preschool and early school periods.

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The Issues and Improvement of Teacher Development Under the Background of Urban-Rural Integration—Based on the Investigation in Part of Chongqing Urban and Rural Areas

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Through the investigation of primary and secondary school teachers in urban and rural areas in Chongqing City (a major city in Southwest China), the present study has found that there are certain differences between urban and rural areas in teachers' professional development. The specific manifestation of the difference lies in teachers' structural imbalance. In rural areas, the manpower of teaching is extremely weak. The professional knowledge and ability of the rural teachers is below the level of the urban teachers. The professional development circumstances of urban and rural teachers are also discriminated. The limited developmental opportunities become the major obstacle. The communication between urban and rural teachers is inefficient and the rural teachers' training has a tendency of formalization. By means of establishing the teachers' professional development accountability system, changing the management system of rural teachers, constructing the rural teachers' professional leading system, perfecting the teachers' training system, and improving the urban and rural teachers' exchange system, we can promote the development of urban and rural teachers as a whole.

Keywords: urban-rural integration, primary and secondary school teachers, professional development

Introduction

Urban-rural integrated development is our strategic choice for national economy and social development in this new stage, which is of great significance to the "building of a wealthy society" (Ke, 2011). Chongqing was approved as a national urban-rural integrated reform experimental zone in June 2007. Since then, Chongqing has raised the curtain of urban-rural integrated development, and thereupon, education has started a new phase. The point of urban-rural integrated development is to seek social justice. Thus, the key factor of urban-rural education integration development is to pursue equity. Teachers are the core section of the educational resources, and the level of the development of education is directly determined by the level of teachers. Consequently, it is the most significant "soft resources" in education (Hargreaves & Fullen, 1992). Meanwhile, it is also a crucial part of the overall planned development of education in urban and rural areas. However, the deep gap between the urban and the rural gives a tough time to the rural attracting teachers and also makes it difficult for the rural to offer the working and scientific training for the in-service teachers. Furthermore, the drainage of the outstanding teachers from the rural makes an even deeper gap between the

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urban and the rural, concerning the structure of teachers, the level of teachers' professional development, and teacher training. In such circumstances, it is supposed to be a major preoccupation for us to search for the differences between the teacher development of the urban and the rural, to realize the sharing of high quality resources, and to promote the education equity at the same time.

Fundamental Information of the Survey

In this research, questionnaires and on-site interviews were made among some school teachers in urban and rural areas of Chongqing, a part of teachers in urban and rural areas were chosen to be investigated and interviewed comparatively. Representative districts or countries in this survey on the basis of the strategic layout of development were called "one circle, two wings" of Chongqing. The questionnaire is chiefly comprised of two segments: The first is about teachers' fundamental information and the second is around the current conditions of teachers' professional development, which are discussed from three dimensions: teachers' professional knowledge and capacity, teachers' self-cognition about their professional development, and the training of teaching. The questionnaire survey is conducted through random sampling. One thousand and fifty copies of the questionnaires were handed out in all and 995 were retrieved. The rate of retrieval is 94.7% and validity is 98.6%. Table 1 shows the basic information of the survey subjects.

When it comes to on-site interviews, headmasters and teachers from schools both in urban and rural areas are divided in to two groups and interviewed respectively. We conduct individual and group interviews with 38 teachers; and the headmasters of these sample schools received interview and questionnaire survey that are designed essentially identical.

Table 1

Basic Information of the Survey Subjects

Survey category		The number of people (percentage)
Gender	Male	330 (36.8%)
	Female	566 (63.2%)
In-service years	1-3 years	51 (5.4%)
	4-10 years	118 (12.4%)
	11-20 years	411 (43.3%)
	21-30 years	250 (26.3%)
	Over 30 years	120 (12.6%)
Educational background	Technical diploma degree and below	17 (1.8%)
	Junior college diploma degree	255 (26.9%)
	Bachelor's degree	657 (69.3%)
	Master's degree and above	14 (2.0%)
Title	Senior	43 (4.5%)
	Secondary	406 (45.1%)
	Primary	489 (47.4%)
	Others	6 (3.0%)
School category	Urban schools	472 (49.4%)
	Rural schools	484 (50.6%)

Results

The Structure of Teachers' Team

Composed of the structure of teachers' degrees and their technical titles, the structure of teachers' team is

an important evaluating indicator for the overall development level of teacher troops.

Academic degree structure. According to the results of the questionnaire, teachers with a bachelor's degree dominates, making up 72.2% in the urban and 65.9% in the rural while teachers with a junior college diploma degree or below have lower percentages of 20.6% in the urban and 37.4% in the rural respectively. When it comes to teachers with a master's degree or above, there is none in the rural; however, 2.5% teachers in the urban have such high degrees. The statistics indicate that although teachers are getting higher degrees both in the urban and in the rural during the period of compulsory education, the degree gap still exists between the two.

Technical title structure. The survey found that professional ranks and the development stages of teachers are not always in direct proportion. There were differences in job structure between urban and rural areas. In urban areas, there are 48.8% primary and secondary school teachers who are in elementary rank, 45.9% secondary rank teachers, and 5.2% senior rank teachers, while in rural areas, the percentages are 53.8%, 42.2%, and 3.9% respectively. The senior rank proportion in urban areas is higher than that in rural areas. This is in accordance with the results of the teachers' interviews. Most of the rural teachers are unsatisfied with the evaluation of senior titles. They think that the evaluation criteria are too harsh.

The Professional Knowledge and Abilities

The questionnaires scrutinize urban and suburban teachers' professional knowledge and abilities mainly from what latest educational theoretical knowledge they have mastered and their levels of utilizing multimedia and other teaching aids.

Teachers' mastering of the latest educational theoretical knowledge. Urban and suburban teachers' conditions of mastering the latest educational theoretical knowledge are aimed at scrutinizing those teachers' levels and updating their professional knowledge. The results indicate that, in urban schools, 6.1% of the teachers surveyed have a thorough and perfect knowledge of the latest educational theoretical knowledge and 49.5% of them are reported to know it quite well, while 42.2% of the teachers admit that they just have a general and rough idea of that knowledge and 2.2% do not know it at all. As for rural school teachers, counterparts of each mastering level are 2.4%, 27.5%, 62.2%, and 7.5% respectively. According to the investigation, we can draw a conclusion that urban teachers know more about the professional knowledge than rural teachers.

Applying multimedia technology and other teaching aids. In contemporary society, applying multimedia technology and other assistant aids can advance teaching effectively, which is also one of the means of examining teachers. According to the investigation, 43.7% of the urban teachers always apply teaching aids, 35% sometimes use them, and 12.1% take advantage of them at times, while 8.4% teachers hardly use them. On the other hand, 25.1% of the rural teachers often apply them, 38.8% use them at times, 21.9% teachers make the best of them occasionally, and 14.2% teachers never handle it. The urban teachers are much better than the rural teachers in the aspect of applying teaching aids.

Teachers' Professional Development

The difficulties teachers faced with in professional development. Integrating all aspects of factors, you could find that the difficulties that both rural and urban teachers are faced with are limited time, limited opportunity, family burdens, and lower capacity of learning. The research indicated that there are 59.1% and 61.4% respectively of the urban and rural teachers to check the choice of limited development chance, much

higher than other choices.

In addition, urban teachers who choose limited time (18.2%) are more than rural teachers (13.4%). As for family burdens and limited learning ability, the percentages of urban teachers (12.8%; 3.6%) are lower than those of rural teachers (16.1%; 6.2%) respectively.

The statistical results show that, both urban and rural teachers think that the limited developmental opportunities are the major difficulty in their professional development, and urban teachers are facing more time constraints than rural teachers, while rural teachers have more restriction than urban teachers in family responsibility and their own learning ability.

Teachers' professional development pressure. Urban and rural teachers' pressure is basically similar to each other, which originating in higher expectations from society, management styles in schools, evaluation of professional titles, interpersonal relationships, and parents' demands. According to the survey, social expectations, school management styles, and professional titles are the major sources of pressure. Only in interpersonal relationships and parents' demands, there are slight differences. A percentage of 5.99% of the rural teachers and 3.33% of the urban teachers regard interpersonal relationships as the major source of pressure, while 8.12% of the urban teachers and 6.33% of the rural teachers have to encounter the needs of their parents.

Teacher Training

Training opportunities. According to the survey, 25.3% of the urban teachers get training opportunities every week, but only 17.9% of the rural teachers get that. Forty-five percent of the urban teachers are offered the opportunities each semester and 41.7% of the rural teachers do so. At the same time, 6.5% of the rural teachers say that their schools hardly offered teacher training, but only 3.6% of the urban teachers say so. This indicates that the rural teachers have fewer training opportunities than the urban teachers.

Methods and effects of the training. Nowadays, main methods to train teachers include attending the vocational training of teacher training schools, systemic training during free time at school, short-term off-job training, teachers learning from each other within schools and making a group with other experienced teachers, cooperating and doing research with theoretical researchers, learning from specialists' reports, and so on (Zhu, 2011). According to the survey, 25.85% of the urban teachers and 27.63% of the rural teachers think that communicating with other teachers within schools and making a group with experienced teachers are the most effective methods. After those two are short-term off-job training, vocational training in teacher training schools, and systematic training within school during leisure time. All the teachers from the urban and rural areas do not regard cooperating with theoretic workers and learning from specialists' reports as effective ways of training because both of the methods are too theoretical.

Discussion and Conclusions

The Teachers' Team Structure of Urban and Rural Areas Is Seriously Out of Balance

Teachers in rural areas have less education backgrounds and lower professional titles in comparison with teachers in urban areas. Generally, rural schools are restricted by the local conditions and the underdeveloped economy, so they have less attraction to those teachers who have higher education backgrounds. At the same time, although rural teachers' salaries get increased a lot, there is also a wide gap between the urban and rural teachers. Teachers in urban areas have more chances to get many kinds of rewards and their benefits are much

better. These conditions attract some excellent teachers to move from the rural to the urban. Besides, the current evaluation of professional titles imposes uniformity in all cases. It is difficult, especially the number of professional titles is apt to urban schools. It adds pressure to the evaluation of rural teachers' professional titles virtually. However, the rank of professional title decides a teacher's wage rate directly. For example, according to an interview to a rural middle school teacher, after putting the performance wage system into effect, the average wage of a secondary level teacher is more than ￥2000, but the wage of a senior teacher is more than ￥4,000. This greatly hit the enthusiasm of teachers.

Teachers in Rural Areas Are Inferior to Those in Urban Areas Both in Major Knowledge and Abilities

Rural teachers are lack of knowing and mastering the latest educational theoretical knowledge. It is also learned from an interview about a rural middle school, a part of teachers repel learning and training, unwilling to accept new knowledge, thoughts, and things. They have less professional knowledge and capacities than urban teachers because of the limited economic development and inadequate fund investment in rural areas, the teaching infrastructure there does not meet the actual needs and the teachers have no access to modern teaching equipment, which make the teachers' information of instructional technology generally poor. But in urban areas, most of the schools have already achieved teaching modernization and the application of multimedia has been a teacher's basic literacy. So we can draw a conclusion that the insufficient fund investment and unfair allocation of teaching resources impede teacher development. And these directly cause the differences between the urban and rural areas.

Different Situations and Restricted Opportunities Are the Major Obstacles

Teachers' professional development is not an isolated incident, but influenced and restricted by government, society, school, family, and other factors (Lu & Zhong, 2007). Facing the pressure from all sides and power, due to the different living environment and different development conditions, the urban and rural teachers face different situations in the course of professional development. According to the investigations, teachers in urban and rural areas all regard the chance restrictions as major difficulties in their professional development, which illustrates that all the departments do not attach much importance to the professional development of teachers, the offering of relevant policy and support of development platform is far from enough. High social expectations, the school management mode, and professional title evaluation are urban and rural teachers' common recognition of the main pressure sources. But rural teachers also tend to believe that interpersonal relationship is an important pressure source. Urban teachers consider parents' demands as an important pressure. It is not difficult to understand that the rural parents to children's expectations are lower than those of the urban parents, which makes it become one of the most important pressure sources of the urban teachers.

Urban and Rural Teachers' Exchanging Effectiveness Is Insufficient and Rural Teachers' Training Has the Tendency of Formalization

The key to urban and rural teachers' overall development is the sharing of high quality teacher resources, so, the city of Chongqing has established the urban and rural teachers' exchange system, to help reduce the gap between urban and rural teachers (Tian, 2011). In aspect of teacher training, there are some problems, such as monotonousness of training method and strongly theoretical but impractical or disguisable training content, and all these problems make it a burden for teachers, and then, in the training of rural teachers. Besides, fewer opportunities and lower frequency of trainings are also displayed. For example, in some schools, only a handful

of backbone teachers can go out to participate in training annually, but the majority of teachers do not have the opportunity to "go out". At the same time, due to rural schools' shortage of funds and other adverse conditions, they cannot ask the experts to "come in", which will undoubtedly be bad for enhancing teachers' professional quality in rural areas and improving the professional accomplishments of rural teachers.

Recommendations

The key of the education integration of urban and rural areas lies in the integration of teaching resources, while the core of the integration of teaching resources lies in promoting the overall quality of rural teachers. Therefore, boosting the professional development of rural teachers is the entry point of education integration of urban and rural areas. And we must promote the whole development of compulsory education in Chongqing by strengthening the integration of teaching resources. According to the present survey, we tentatively put forward the following suggestions.

Establishing Accountability System

During the balanced development of urban and rural teachers, it is of great significance for strengthening teachers' awareness of professional development and ensuring that the work of professional development has been earnestly carried out to establish accountability system for the professional development of teachers and to clear the respective responsibilities and rights among the leaders of related education administrative departments, school principals, and teachers.

Firstly, calling to account the implementation of teachers' professional development tasks based on the precondition that multi-forces of educational department, community members and parents were integrated as the accountability body; educational department of each district, schools, and teachers of compulsory education stage as accountability objects. For the educational administrative departments of each district, the implementation of teachers' professional development task serves as an important factor when schools are evaluated. As for administrators of the schools, they should not only create an environment or an atmosphere to help promote the professional development of teachers, but also do as much as they can to provide opportunities for the professional development of teachers. As for teachers, they need to strive to turn the external driving forces of professional development into self-development with individual consciousness. Further more, they should also develop the awareness and desire to independent development.

Secondly, referring to the two policies published—Professional Standards of Teachers and the Plan on the Implementation of the Integration of Urban and Rural Educational Reform, the work that all categories of personnel have done to implement professional development of teachers is supervised and assessed, and the rewards and punishments are applied due to the degree of implementation and effectiveness.

Besides, what we need to pay attention to is that rural teachers' professional development is far away behind the urban teachers in more than one dimension. Therefore, it is necessary to refine and set up a special system about the rural teachers' professional development accountability on the basis of the unity of the urban and rural areas to guarantee the implementation of the relevant policies and measures, so that we can achieve the goal of the overall development of urban and rural teachers.

Reforming the Management System of Rural Teachers

According to John Rawls's (1971) theory, that is "in the status of justice as fairness, only a country which can compensate the members of the society, especially those who are on the unfavorable position can the

society be justifiable" (as cited in He, 2001). So, in order to balance the development of the teaching profession, what we should do at first is not to make equalization, but considering how to benefit rural teachers and what we can do for them to make them get good treatment while they are in unfavorable situation. In order to solve the problems, we can settle them as follows.

Establishing rural teachers' special allowance program in order to ensure the salaries of the rural teachers to be higher than those of the urban teachers. When considering the balance of teachers' salaries, the establishment of rural teachers' special allowance should on the base of regional characters and real differences of "lap two wings". This part of the funds should be taken by the state or the local government, rather than local government to ensure the stability of the fund resource. At the same time, being sure that the salaries of teachers in rural areas are higher than urban teachers to improve the position's attraction as a rural teacher. For example, there is a policy that a rural teacher's salary is about 25% higher than that of a urban teacher in Russia (Liu & Zhou, 2013). This measure can not only sustain the team of rural teachers, but also absorb young teachers who have high education backgrounds, and it is an excellent way to improve the whole level of rural teachers and promote rural teachers' professional development.

Establishing teachers' quit mechanism to ensure that rural teachers can update and optimize. Teachers' quit mechanism means to persuade some teachers to withdraw from the school (Wang & Tang, 2005), including those who have no sense of moral consciousness, who are lack of enthusiasm and sense of responsibility of teaching, or who have a low professional level. Due to the structure deviation of teachers in rural schools particularly, we can realize teachers' improvement and optimization through this mechanism. Specifically, teachers' quit mechanism should mainly face the following three groups: The first group is indifferent to moral consciousness and lacking of love to students and sense of responsibility to teaching task; the second is short of professional development power and inertia; and the third is affected by teachers' conditions, whose teaching and development ability is low and who has difficulty in having effective development. To this part of teachers, the school should be based on the comprehensive assessment, then, requests those teachers to have vocational training, job transfer, quit, and so on to varying degrees. According to different levels, schools will provide them some society security treatment.

Adjusting teachers' professional title appraisal system, realizing the proportion of senior professional titles towards the teachers in the rural areas. First of all, professional title evaluation system cannot take the town and rural simply "one size fits all" evaluation mode, reversing the current condition that rural teachers' senior title ratio is too small, which causes low job enthusiasm to them, making the senior titles in proportion to the rural teacher tilt, and making the rural teachers achieve corresponding professional qualification through efforts. Secondly, we should break the existing senior professional title of "top position" and set up further incentive measures. In the interview, some teachers exist on senior professional title and stagnant, without phenomenon, which baffles their own development and the quality of teaching ascension. Therefore, it is necessary to consider establishing other incentive measures that outside the traditional professional title system, to prevent teachers to be conceited and arouse their progress.

Constructing Rural Teachers' Professional Leading System

Nowadays, teachers in high schools and middle schools should improve themselves in professional knowledge and abilities, especially for some rural teachers. Therefore, it is the most important thing to construct a perfect rural teachers' professional leading system and to ensure that the teachers can make efficient

progress and renewal in their professional knowledge and abilities.

Building the professional leading institution for rural teachers. The professional leading institution for rural teachers is a specialized agency build for helping develop rural teachers' professional literacy and professional development level. Its mainly functions are leading and promoting the education idea, knowledge skills, and development direction of rural teachers. It also provides a full range of guidance and help for teachers' professional development. The professional leading institution of rural teachers should include the experts and scholars, research staff at all levels, and super teachers in the practice of the emerging field.

Making it clear that teachers' professional development is the leading task. Leading agencies and all the leaders should accurately grasp the tasks and requirements of the professional development of teachers, which targeted professional guidance. Specifically, professional development as a leading task should contain the following: 1. Learning to plan his/her professional career as a teacher. Primary and secondary school teachers are often lack of planning awareness or can not accurately grasp their own situation and environment factors, leading to the blindness of professional development. As a result, the leader should help enhance the awareness of planning and guide the development of career planning goals and tasks; 2. Having full of education theory and knowledge. The leader needs to help promote rural teachers to grasp and understand the latest educational theory and knowledge and provide practical guidance; and 3. Having necessary teaching skills. The leader should provide help and guidance for teachers in the use of multimedia teaching techniques and classroom teaching design ability.

Setting up the security system to lead teachers' professional development. In order to realize the normal running of the institution of teachers' professional leading, the security system should be made. First, the system should ensure the necessary fund. Generally, the establishment and operation of the institution and the employment of professionals are all require fees. In this regard, the relevant administrative departments of education should set dedicated professional teachers to lead the account and to ensure adequate and stable funding sources. Second, the system should set up the organizational guarantee. Various organizations at all levels should pay full attention to the professionals to lead the work of teachers in rural areas, to provide time and resources to help all kinds of professionals, and to promote the achievement of teachers' professional leading task.

Improving Rural Teachers' Training System

Establishing file bag of rural teachers' training. In rural areas, teacher training is focused on individual teachers, and so the majority of rural teachers have no training opportunity. In addition, some teachers just join in the training situation aimlessly. The file bag can record the teachers' participation in training, in order to ensure that every teacher has the opportunity to participate in training, which will also inspire the passion and enthusiasm of the teachers involved in training.

Innovating approaches to training of teachers in rural areas. Current training methods focused on experts' lecture, off-campus training, and demonstration teaching, but the experts' lecture and off-campus training are often too theoretical, it is difficult to arouse the interest of teachers. Meanwhile, the demonstration teaching has certain limitations for mainly doing in their own schools. For this situation, it is recommended to create a diversified and individualized teacher training approach. For example, rural schools can establish "short-term joint training system" with urban schools, it means that through sending young teachers to urban

schools to follow their classes and view their high quality teaching, it can promote the professional development level of rural teachers.

Optimizing the System for Better Exchange Between Urban and Rural Teachers

Regulating the sending-to-rural-area standard for teachers. The plan of sending teachers to rural areas aims at balancing teacher resources and improving the teaching quality in rural areas. However, this plan seems utilitarian, for the teacher who was once sent to the rural area often has an advantage over professional title evaluation and can get a rise in his/her salary. Besides, the teachers sent to the rural areas are often those who lack of teaching skills and have a poor attitude towards students, instead of those prominent ones, which goes against the goal of providing demonstration effect for rural teachers. Due to this, we need to regulate the standard of selecting teachers and evaluate teachers from their teaching skills and moral aspect, so that the plan can really work out.

Transforming the traditional model. Currently, most schools in urban areas only sent one teacher to a rural school, making it impossible for this teacher to be competitive and dedicated. So it is better to send two or more teachers at one time, to encourage competition and therefore improve the teaching quality. In addition, schools involving in this exchange plan need to establish an assessment system by both sides. On the one hand, the rural schools should evaluate the teachers that sent to them and set the evaluation result as an essential requirement for the teachers to get a rise or rank a higher teaching level. On the other hand, the local educational administration should also examine the circumstances of teachers who would be sent to rural areas, and set the number and quality of rural teachers that urban teachers helped with as important standards when it comes to evaluate a “good school” and a “good teacher”.

Constructing teachers’ loss compensation system. The system of loss compensation is for the phenomenon of the loss of excellent teachers in rural areas: The inflow school compensate the outflow school, and the latter makes use of the compensation available to employ other qualified teachers or to provide training opportunities for the on-the-job teachers. For instance, Yucheng District of Shaoxing City regulates that when the brilliant teachers of the primary and secondary schools in the district demand to head towards another school, the school that accepts the skillful teachers need to pay for ￥20,000-150,000 used in teachers’ professional development according to different standards (Sun & Kang, 2010). This measure can not only help rural schools keep the good teachers, but also minimize the loss of rural schools.

As a whole, the balance of urban and rural teachers is an extremely complex project, which not only needs the support of a strong government policy and large investments, but also needs the understanding and cooperation of the majority of urban and rural education executives, school leaders, teachers, students, parents, and all walks of society. Only in this way can we look forward to raising the overall enhancement of rural teachers, diminishing the gap between urban and rural teachers and improving the compulsory education.

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